The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 643.—Vol. XVII. LONDON, SATURDAY, DECEMBER 18, 1847. [Price 6d.

VALUABLE PUMPING AND WINDING ENGINES FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, at WHEAL VOR MINE, in the parish of BREAGE, CORNWALL—

1 80-inch DRAUGHT ENGINE, 10-feet stroke in cylinder, and 8 feet in shaft, main beam and caps, top nozzle, spring piston and rod—all new this year; with four boilers, of 12 tons each, in excellent repair.
1 80-inch DITTO, 10 feet stroke in cylinder, 7½ feet in shaft, cylinder, piston, bottom and cover, nearly new, with two boilers, of 12 tons each, and three boilers, of 10 tons each, all lately thoroughly repaired.
1 49-inch DITTO, 9 feet stroke in cylinder, and 7 feet in shaft, without boilers.
1 20-inch WINDING ENGINE, 5 feet stroke, with two boilers, of 4 and 6 tons, and vertical cage, all in complete repair—the boilers and some other parts nearly new.
1 18-inch DITTO, 4 ft. stroke, with one boiler, of 5 tons, and horizontal cage, complete.
Several TONS of straight and turned STEAM-PIPES.
3 12-head CAST-IRON STAMPS AXLES, with bearings, oak frames, &c., complete.
A powerful WEIGHING MACHINE, nearly new, comprising every requisite.
An immense number of PUMPS, matching-pieces and windbores, 12 to 17-inch bore, with working barrels, doorpieces, H-pieces, cases, with stuffing-boxes and glands to match, from 11 to 19 inches bore, and plunger-poles, from 12 to 19 diameter.
Faggotted rod and cap plates, 6, 7, and 8 inches wide, staples and glands, eyerunners, caps, saddles, troughs and gudgeons for balance and other bobs.

Application to be made to Capt. R. Blight, jun., on the mine.
Dated Nov. 29, 1847.

N.B.—The above are of easy transit to Hayle wharfs, and from thence on ship-board, if required.

CARMARTHENSHIRE.—TO BE LET, OR SOLD, several SEAMS OF ANTHRACITE COAL and IRONSTONE, lying under the FARMS of CILFERY, NEW INN, FOY, and ROSEFACH, situate in the parishes of LLANELLY and LLANGENDEIRNE, in the said county. If required, the SURFACE also will BE DISPOSED OF.—The above property is within a short distance of the Kidwelly Canal, and distant from Pembrey Floating Harbour 6 miles, where the present demand for coal far exceeds the supply.
Further particulars can be obtained on application to Dr. Lawrence, Carmarthen; or to Mr. John Griffiths, Abergwilly, near Carmarthen.
Carmarthen, Nov. 29, 1847.

FOR SALE, BY PRIVATE CONTRACT—A single-acting PUMPING-ENGINE—cylinder 30-inch diameter, 9-feet stroke, equal beam, with 7-ton boiler, cisterns, spring beam, and first set of rod-shafts attached, being the engine of Wheal St. Cleer.—For particulars, apply to Capt. Osborne, Liskeard; Mr. West, engineer, St. Blazey; or Mr. Rendle, the purser, 13, Octagon, Plymouth.

BLEWITT'S REFINED IRON, OR METAL.—(For a description of the process, and the claim of the patentee, see the *Mining Journal* of December 11, 1847).

ADVANTAGES.

Improved quality—less waste of metal—less expense of fuel. Improved quality evidenced by the high character of the iron in the market, for combined strength and ductility.

SAVING OF IRON.

	cwts.	qrs.
By the old refinery, the average annual yield of pig-iron to a ton of metal, at most of the works in Wales, is not less than	23	0
By the new patent process, the average yield does not exceed	21	1
Saving	1	3

In the refinery, the yield of coal made into coke is about	15 cwts.
By the new process, the yield of coal (which is used without being coked) is about	9
Saving	6 ,,

The saving of 1 cwt. 3 qrs. of pig-iron, at £4 per ton, will be	7s 0d
The saving of 6 cwts. of coal, at 4s. per ton—say	1 2
Total saving, per ton of metal	8s 2d

The yield of the metal, in puddling, does not exceed 21 cwts. to the ton, and is, on the average, much less.

Samples of the metal may be had, and terms of licenses for the use of the patent process, may be known on application to R. J. Blewitt, Esq., M.P., Llantarnam Abbey, near Newport, Monmouthshire.

STRONG MIXING PIG-IRON.—The YSTALYFERA IRON COMPANY beg to solicit ORDERS for their ANTHRACITE PIG-IRON. This iron mixes well with Scotch pig—imparting to it strength and elasticity, and receiving from it a portion of its softness and fluidity. No. 3 Pig is recommended for mixing with soft iron—Nos. 1 and 2, for machinery castings, requiring great soundness and strength. At this period, when cast-iron is so much employed in the construction of bridges and other buildings, requiring all the strength and elasticity which the best mixture of metal will afford, it may be interesting to call attention to the characteristics of ANTHRACITE PIG-IRON, as REPORTED on by that great practical authority, the late DAVID MUSHET, Esq., M.I.C.E.:—

"It greatly exceeds, in *strength*, in *defective* powers, and capacity to resist *impact*, any iron at this time manufactured in the United Kingdom."

"It now only remains for me to mention a property peculiar to this iron, which was noticed at the time I made the trial experiments, four years ago, but which has been more fully developed in those more recently made. The property referred to is one of *great springiness*, or *elasticity*, which communicates a tendency to the bar, in deflecting and breaking, to resume its rectangular form. Bars that had obtained a permanent set of 2-10ths, when afterwards broken, presented but a slight deviation from a right line; and in no case, did the curvature exceed one-fourth of a tenth."

"It was also remarked, that most of the fractures, in breaking, presented a *regularity of grain* throughout, resembling the structure of *unhardened steel*."

Address THE YSTALYFERA IRON COMPANY,
Dated June 22, 1847. *Near NEATH, SOUTH WALES.*

HOT-BLAST WITHOUT COAL, LABOUR, OR REPAIRS, DIXON AND BUDD'S PATENTS.

Apply for particulars, or to inspect the process in operation on six blast-furnaces, to J. Palmer Budd, Esq., Ystalyfera Iron-Works, near Neath.
Dated June 22, 1847.

IMPORTANT TO RAILWAY AND STEAM-NAVIGATION COMPANIES, MANUFACTURERS, AND ENGINEERS.

W. BROTHERTON AND CO.'S

PATENT LUBRICATING FLUID (or Animal Oil) FOR ALL DESCRIPTIONS OF MACHINERY.

W. B. & CO. have the pleasure to state, that the above article is extensively used in her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and fine pieces of machinery, as for the heaviest bearings of the steam-engine. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smell, and calculated to effect a vast saving in the expenditure of working steam powers.

Further particulars can be had, and testimonials seen, by application to the manufacturers, W. BROTHERTON & CO., Hungerford Wharf, Strand, London.

N.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

FLEXIBLE HOSE-PIPES FOR LOCOMOTIVE ENGINES, RAILWAY CRANES, FIRE-ENGINES, GAS, &c.

PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND TUBING OF EVERY DESCRIPTION.

These pipes are made to stand hot-water without injury—are very superior to leather pipes, or the common India-rubber pipes; and, as they do not become hard or stiff in the lowest temperatures, or require any application when out of use, are particularly well adapted for fire-engines.

FLEXIBLE TUBING, of every description, for gas, chemical purposes, &c.

VULCANISED INDIA-RUBBER WASHERS, all sizes, for steam and hot-water joints, &c.—Sole manufacturer, JAMES LYNE HANCOCK,
Goswell Mews, Goswell-road, London.

TO ENGINEERS AND BOILER-MAKERS.

LAP-WELDED IRON TUBES, FOR MARINE AND LOCOMOTIVE STEAM-BOILERS,
TUBES FOR STEAM, GAS, AND OTHER PURPOSES,
ALL SORTS OF GAS FITTINGS.
THE BIRMINGHAM PATENT IRON TUBE COMPANY,
42, CAMBRIDGE-STREET, BIRMINGHAM, & SMETHWICK, STAFFORDSHIRE,
MANUFACTURE BOILER and GAS TUBES, under an exclusive License from Mr. R. Prosser, the patentee. These tubes are very extensively used in the boilers of marine and locomotive steam-engines in England and on the Continent—are stronger, lighter, cheaper, and more durable than brass or copper tubes, and warranted not to open in the weld.
42, CAMBRIDGE-STREET, CRESCENT, BIRMINGHAM.
WORKS—SMETHWICK, STAFFORDSHIRE.
LONDON WAREHOUSE—No. 68, UPPER THAMES-STREET.

TO THE SHAREHOLDERS OF THE AUSTRALIAN MINING COMPANY.

GENTLEMEN,—The result of the meeting yesterday having placed me in the enviable position of one of the DIRECTORS of your COMPANY, I take this opportunity of offering my sincerest and best thanks for your kind support, and of assuring you of my endeavour to discharge the duties imposed upon me to the best of my ability.
I remain, Gentlemen, your most obedient and obliged servant,
1, Adelaide-place, Dec. 14, 1847. JOHN CAPPER.

TO THE SHAREHOLDERS OF THE AUSTRALIAN MINING COMPANY.

GENTLEMEN,—I beg to return my grateful acknowledgments for the honour you have conferred on me by ELECTING me to a seat in your DIRECTION. I shall endeavour, at all times, to discharge faithfully the duties of the trust I have had the pleasure to receive at your hands. I am, Gentlemen, your very obedient servant,
74, Cornhill, Dec. 14, 1847. G. E. HODGKINSON.

STEAM TO INDIA VIA EGYPT, MALTA, ITALY, ALEXANDRIA, AND THE PENINSULAR PORTS.

PASSAGE TO BOMBAY, MADRAS, AND CALCUTTA.

The Peninsular and Oriental Steam Navigation Company BOOK PASSENGERS for CEYLON, MADRAS, and CALCUTTA direct, by steamers leaving Southampton on the 20th, and for Alexandria, *en route* to Bombay, on the 1st of every month.

A steamer from Southampton leaves the 1st and 30th of every month for Malta, whence are steamers to Naples, Genoa, Civeta Vecchia, three times a month.

STEAM TO CORUNNA, OPORTO, VIGO, LISBON, CADIZ, AND GIBRALTAR.
A steamer leaves Southampton on the 7th, 17th, and 27th of every month.

Apply at the Peninsular and Oriental Steam Navigation Company's offices, 51, St. Mary Axe, London, where only passages can be secured throughout.

PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY.—At a Meeting of the proprietors of this company, held at their offices, 51, St. Mary Axe, on the 8th inst., pursuant to notice, it was unanimously resolved:—

1. That the report, now read, be adopted and circulated amongst the proprietors.

2. That Sir John Pirie, Bart., and Capt. R. Bourne, R.N., be re-elected directors of this company, and that the Hon. J. T. Leslie Melville, and Jameson Hunter, Esq., be re-elected the auditors of the company, for the ensuing two years, in conformity with the provisions of the Deed of Settlement.

3. That a dividend of 4 per cent., recommended in the report now read, be payable on or after the 23d December, 1847, between the hours of Twelve and Three o'clock on each day, to such proprietors as are duly qualified to receive the same.

4. That, in the opinion of this meeting, the late deputy-chairman, Sir John Campbell, the board, and managing directors, are entitled to the undiminished confidence of the proprietors, and that the cordial thanks of this meeting be offered to them, for the zea and ability exhibited in conducting the affairs of the company.

ASSAYING AND ANALYSIS.—Mr. MITCHELL begs to inform the MANAGERS, &c., of MINES, SMELTING-WORKS, and MANUFACTORIES, that he still continues to CONDUCT ASSAYS and ANALYSES of all PRODUCTS, metallurgical and manufacturing, at his LABORATORY,
23, *HAWLEY-ROAD, KENTISH TOWN, LONDON,*
to which address communications are to be forwarded.—Instruction in all branches of assaying and analysis as usual.

ADCOCK'S PATENT SPRAY PUMP.—This important INVENTION having been PERFECTED, and brought into SUCCESSFUL PRACTICAL OPERATION at LLANHIDDEL, at pits belonging to R. J. Blewitt, Esq., M.P., Llantarnam Abbey, near Newport, Monmouthshire, the PATENTEE is ready to RECEIVE, and to execute, ORDERS.—Apply to Henry Adcock, C.E., at his offices, 137, Strand, London, where pamphlets, descriptive of the invention, may be had; at the office of the *Mining Journal*, 26, Fleet-street; and through any respectable bookseller—price 6d.

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."
Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Tuckingmill, Camborne, Cornwall.

TIN VALE MINING COMPANY, ST. NEOT, COUNTY CORNWALL.

1000 parts, or shares, of £2 per part, or share.
NOW AT WORK ON THE "COST-BOOK" PRINCIPLE.

CHAIRMAN.
ROBERT OWEN ALAND, Esq., Cambridge-terrace, Hyde-park.

DIRECTORS.
JOHN POSFORD OSBORNE, Esq., Ardleigh Park, Colchester.
JOSEPH CARRINGTON RIDGWAY, Esq., Roehampton Lodge, Roehampton.
BENJAMIN FORRESTER SCOTT, Esq., Northampton Park, Ball's Pond.
BARTHOLOMEW DAWES, Esq., Soho-square.
Captain THOMAS ROSE, Waterloo, Northampton.
WILLIAM W. MANSELL, Esq., *Purser*, Dorchester-place, Blandford-square.

Captain of the Mine—Mr. John Floyd, Harrowbridge.
Solicitor—John Butler, Esq., 134, Tooley-street, Southwark.
Bankers—Messrs. Ransom and Co., London.

PROSPECTUS.

This mine sett is situate at Harrowbridge, in the parish of St. Neot, in the county of Cornwall, on the banks of the Draina River, and extends over about 200 acres of mineral land. It is held on lease for 21 years, from the lords of the manor, at a royalty, or due, of 1-15th, and totally free from sleeping or dead rent.

Five tin lodes, underlaying south, have already been opened. A shaft has been sunk about 10 fathoms, and two adits driven—one about 80 and another 20 fathoms. The first lode in the chief adit, marked A on the map, has already been opened 10 fathoms to the east, and about 30 fathoms to the west, on the course of the lode, from which ore is procured, and a considerable quantity is now on the bank, ready for stamping.

The second adit, marked B on the map, has been driven 20 fathoms on the course of a lode, of most promising appearance.

Five pairs of stamps are in course of construction, as well as all necessary machinery for carrying on the works efficiently; and Captain Floyd asserts that returns will be made before Christmas.

The ore is of the best description, being free from compound.

The tin streams are considerable: they have been secured also for the company, at a royalty, or due, of 1-12th, and arrangements have been made for working them on tribute.

The freehold of land, sufficient for the erection of workmen's cottages, has likewise been obtained, and the quantity of granite which abounds in the locality renders building cheap.

The operations of the company are carried on under the "Cost-book" Principle, which exempts the company from the provisions of the Act for the Registration of Joint-Stock Companies (7 and 8 Vic., cap. 110), the 63d section of which enacts—

"Provided always, and be it enacted, that nothing in this Act contained shall extend, or be construed to extend, to any partnership formed for the working of mines, minerals, and quarries, of what nature soever, on the principle commonly called the Cost-book Principle."

Under the "Cost-book" Principle, shareholders have the right of determining their responsibility, by giving notice of their intention to relinquish their shares, and on forfeiture of all previous payments. The 15th clause states—

"That any adventurer, or shareholder, may determine his or her responsibility or liability to the affairs of this mine, upon his or her giving notice, in writing, to the purser of the company for the time being, of his or her desire of retiring from the company; and, also, upon depositing with the said purser the share or shares held by him or her, and signing a relinquishment of all claims or demands on the company in respect to such share or shares."

The directors, after considerable negociation, have succeeded in effecting the following arrangement, which they consider highly advantageous to the company—namely: That the present lessees, in consideration of the transfer of the lease to the company, for the machinery in course of erection, and for the works hitherto effected, to be paid the sum of £1000 cash, and to have one-tenth of all profits arising from the mine, until a further sum of £1500 shall have been paid to them; the company having the option of cancelling the latter disbursement on payment of the sum of £1000 on or before the 29th of September, 1848.

Applications for shares to be made to the purser, W. W. Mansell, Esq., at the temporary offices of the company, 17, Dorchester-place, Blandford-square; John Butler, Esq. solicitor to the company, 134, Tooley-street, Southwark; James Lane, Esq., mining sharebroker, 75, Old Broad-street, city; and Messrs. Oliver and Co., stock and share brokers, Coggeshall, Essex—where prospectuses and every information may be obtained; also at the office of the *Mining Journal*.

THE PATENT OFFICE AND DESIGNS REGISTRY, *No. 210, STRAND, LONDON.*

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

CONTRACT FOR COALS—GENERAL POST-OFFICE OF FRANCE.—Notice is hereby given, that the CONTRACT, as advertised to be closed on the 13th of November last, for the SUPPLY of SIX HUNDRED THOUSAND KILOGRAMMES of COALS, to be delivered in CORSICA, for the use of the Post-office steamers, REMAINS OPEN until the 24th inst., on which day, at One o'clock in the afternoon, new tenders, in the sealed form, will be publicly received and adjudicated upon at the General Post-office, Paris.
Conditions of contract can be known at the office of the Consul-General for France, 9, Copthall-buildings.—London, Dec. 15, 1847.

IRONS, COALS, CASTINGS, STEEL, NAILS, OILS, LEATHER, CANVASS, &c.—A PERSON of considerable experience, and possessing one of the largest and best established connections in the west of England, is open to TREAT with Merchants, Manufacturers, Patentees, and others, FOR SALES, ON COMMISSION.—Apply to "A. Z.," Truro.

TO RAILWAY CONTRACTORS, COLLIERY OWNERS, IRON MERCHANTS, AND OTHERS.—TO BE DISPOSED OF, BY PRIVATE CONTRACT, TWO or THREE HUNDRED TONS of CONTRACTORS' RAIL, bvs., 45 lbs. per yard—in lengths of 12, 15, and 16 feet—the same having been but a short time in use; are in good order, and may be purchased at a moderate rate.—Apply to John Stephenson and Co., Railway Contractors' Office, Stirling.—Dec. 6, 1847.

TO RAILWAY ENGINEERS, CONTRACTORS, AND OTHERS.—The ADVERTISER having obtained her Majesty's Letters Patent for an IRON TRUSS BRIDGE, peculiarly adapted, from its great strength and economy, for RAILROADS, is ready to TREAT with such companies, and other persons, as may feel disposed to adopt it. This bridge has been put up in the United States, on the New York and Harlem railroad—it being one of 70 feet span, and weighing only 13 tons; and is highly approved of by the directors—in consequence of which several other companies are giving their orders for its erection.
A model can be seen, and further particulars given, either personally or by letter, on application to Mr. S. Moulton, care of the Editor of the *Mining Journal*, 26, Fleet-street.

RAILWAY ACCIDENTS.—The PRACTICABILITY of our "MEANS OF COMMUNICATION BETWEEN THE GUARDS (or passengers) and ENGINE-DRIVER," as well as our ELECTRIC TELEGRAPH, and arrangements may be seen by applying to BRETT & LITTLE, Furnival's Inn, London.

WANTED, for HERODSFOOT MINE, a SECOND-HAND DOUBLE-ACTING ROTARY STEAM-ENGINE, of from 18 to 22-inch diameter in cylinder, with BOILER, complete, and with or without winding and crushing machinery. The engine must be in good condition.—Description, specifying particularly the age, the length of stroke, and weight of boiler, with terms, may be sent to Mr. Bosse, purser, Liskeard.

WILSON & FRASER, 2, WELLINGTON-BUILDINGS, LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE PIG-IRON, BAR-IRON, RAILWAY CHAIRS, and RAILWAY BARS.

MR. R. TREDINNICK, THREE KING'S COURT, *LOMBARD-STREET, LONDON,*
Continues to DEAL in every description of MINING, RAILWAY, BANKING, INSURANCE, CANAL, and OTHER SHARES.—Statistical information afforded gratuitously, upon personal application.—MONEY ADVANCED upon the above securities.

JAMES LANE, MINING SHARE DEALER, 75, *OLD BROAD-STREET, LONDON.*

BRITISH MINING OFFICES, No. 12, HAYMARKET, And No. 41, MOORGATE-STREET, LONDON,
And No. 4, STAMP-OFFICE BUILDINGS, MANCHESTER.
At either of which places PROSPECTUSES and SHARES in the various SILVER-LEAD and COPPER MINES connected with these offices, may be obtained.
T. H. TAUNTON, London.
W. SHEARMAN, Manchester.

MONEY.—MESSRS. KILLICK & CO. (late WINSTANLEY, KILLICK, & Co.), SHAREBROKERS, inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms: they also BUY and SELL every description of STOCK and MINING SHARES, at much less commission than usually charged.
6, Bank Chambers, opposite the Bank of England.

CONSOLIDATED COPPER MINES OF COBRE ASSOCIATION.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the proprietors of this association will be HELD, in conformity with the Deed of Settlement, at the office of the company, 26, Austinfriars, on Monday, the 3d day of January, 1848, at One o'clock precisely. On that day two directors (namely, Sir John Pirie, Bart., and George Whitmore, Esq.), and one auditor (Alex. Druce, Esq.), will go out of office by rotation, agreeably to the Deed of Settlement, but are immediately re-eligible, and are candidates, for re-election.
It is necessary that parties intending to offer themselves as candidates for the direction and auditorship, should leave notice of such their intention with the secretary, at the office of the company, 26, Austinfriars, at least 14 clear days before the day of election.
By order of the court of directors,
26, Austinfriars, Dec. 15, 1847. WM. LECKIE, Secretary.

"INDUSTRY—ECONOMY—PERSEVERANCE."

MINING COMPANY OF IRELAND.—The stated HALF-YEARLY ASSEMBLY of the MINING COMPANY OF IRELAND will be HOLDEN at the company's office, No. 30, Lower Ormond-quay, on Thursday, the 6th January next, at Twelve o'clock noon, to receive from the board of directors a report, with abstract of the company's accounts, for the half-year ending 1st December inst.
Dublin, Dec. 16, 1847. By order, RICHARD PURDY, Sec.

ROYAL SANTIAGO MINING COMPANY.—The directors hereby give Notice, that the HALF-YEARLY GENERAL MEETING of the shareholders will be HELD at the office of the company on Wednesday, the 5th January next, at One o'clock precisely, when the directors will make their report.
38, Broad-street-buildings, Dec. 18, 1847.

ST. JOHN DEL REY MINING COMPANY.—Notice is hereby given, that the ELEVENTH HALF-YEARLY DIVIDEND, being TEN SHILLINGS per share, on the shares in this company, will be PAID at this office on Thursday, the 20th January, 1848, and any succeeding day, between the hours of Ten and Four.—Forms for claiming the dividend may be obtained at the company's office, and must be left three clear days' for examination previous to payment.
8, Tokenhouse-yard, Dec. 13, 1847. For the Secretary—W. ROUTH.

TRELEIGH CONSOLIDATED MINING COMPANY.—The directors hereby give Notice, that a MEETING of the shareholders will be HELD at the office on Monday, the 3d of January next, at One o'clock precisely, when the accounts for three months, ending the 31st December, will be laid before them.
57, Old Broad-street, Dec. 10, 1847. WM. NICHOLSON, Secretary.

WHEAL TRESCOLL, OR THE MODEL MINE—being an EXPERIMENT in MINING, on an entirely new principle.—On January 1, 1848, will be ISSUED to the PUBLIC a PROSPECTUS, describing a PLAN of OPERATIONS, whereby MINING may be CONDUCTED and CARRIED OUT on as FAIR and LEGITIMATE a MANNER as any other branch of civil engineering. Any gentleman wishing to become a patron to the Reform Mining System, may have a private interview with one of the projectors, by calling at the office of Mr. C. S. Richardson, C.E., 5, Whitefriars-street, City.

PROPOSED LAMBETH PALACE IRON BRIDGE.
Plain and coloured, from 5s. to 7s. 6d. each.
In a few days will be published, a beautiful LITHOGRAPHIC ENGRAVING of THOMAS MOTLEY'S SPLENDID and NOVEL DESIGN for the above-mentioned BRIDGE.
May be had at the office of the *Mining Journal*, 26, Fleet-street; of Mr. Weale, Architectural Library, High Holborn; and of Charles Gilpin, Bishopsgate-street.

PATENT GALVANISED IRON AND WIRE ROPE WORKS, *MILLWALL, POPLAR.*

ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained a PATENT for an IMPROVED METHOD of GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, adding only £10 per ton instead of £20, under the ordinary processes. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1826, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each.
DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

SIR JAMES MURRAY'S FLUID MAGNESIA.—Prepared under the immediate care of the inventor, and established for upwards of 30 years.—This elegant preparation is recommended in all cases of bile, acidities, indigestion, gout, and gravel, as the most safe, easy, and effectual form in which magnesia may—and, indeed, the only one in which it ought—to be exhibited, possessing all the properties of the magnesia now in general use, without being liable, like it, to form dangerous concretions in the bowels, it effectually cures HEARTBURN without injuring the coats of the stomach, as soda, potass, and their carbonates are known to do; it prevents the food of infants turning sour; in all cases it acts as a pleasing aperient, and is peculiarly adapted to females. It has long been known that the most serious consequences have frequently resulted from the use of solid magnesia, which has been proved by Mr. Brande and many other eminent chemists, to form concretions in the bowels, endangering, and, in some instances, destroying life.—Sir HUMPHREY DAVY testified that this solution forms soluble combinations with uric acid salts in cases of gout and gravel—thereby counteracting their injurious tendency, when other alkalies, and even magnesia itself, had failed.

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On Iron—its Active and Inactive States.

MR. THOMAS SPENCER'S LECTURE AT LIVERPOOL.

PART IV.—IRON IN ITS INACTIVE STATE.—(*Concluded from last week's Mining Journal.*)

There are some other bodies in whose contact iron may be rendered inactive while in nitric acid, but none that act more effectually than platinum or gold; next to them, however, may be ranked dense close-grained carbon. In this respect, perhaps, the best is that found lining the interior surface of the retorts that are used in the distillation of coal gas. It is evidently a deposit of the vapour of carbon, and may be termed a species of coke, although it is totally unfit for fuel. It can be obtained in pieces of considerable size, and of a very high specific gravity. It possesses a decided metallic lustre, but is so hard that ordinary instruments are but little capable of cutting it. Good specimens have been found to act with nearly as much effect in imparting inactivity to iron as platinum or gold. In operating with it the same conditions are to be observed as already named with respect to platinum; in a word, the carbon is substituted in the acid for the metal. Apart from contact with another substance, perhaps the galvanic battery induces inactivity in iron with the greatest permanency. It is brought into contact with the positive end of the battery, and made to act as the negative electrode; while the opposite one is a piece of platinum, which must be first immersed in the acid, and then the iron, but very gradually. If the battery be a tolerably powerful one, and the two electrodes suffered to remain for a few hours, thus opposed to each other in the acid, the iron, when withdrawn and the acid washed from it, will be found to have received as high a degree of inactivity as, in the present state of our knowledge, it would appear possible to give it. Another method may be named, which is equally effectual in preserving the iron itself while in the acid, but not so in imparting the property to other pieces of the same metal. It is by heating the end of a slip of iron to whiteness, then allowing it to cool, and afterwards dipping that end first into the acid. It appears pretty obvious, that the protoxide thus formed on the end of the iron is, in this case, the agent that induces inactivity.

This inactive state, however, is not produced if we touch the immersed iron with copper, tin, zinc, bismuth, antimony, silver, or lead, or, in short, any metal capable of acting directly on nitric acid. Another method of rendering iron inactive must yet be mentioned, though it differs much in detail from those already described. To a solution of strong nitrate of silver must be added about a fourth of its bulk of nitric acid. The iron is then to be immersed in it, when a most energetic precipitation of silver, in the metallic state, is the immediate result; but it fastens itself round the iron. Presently, however, the silver begins to disappear, being again taken into solution by the free acid. The iron is now left clean and bright, being no longer capable of exerting any power on the solution or the acid. Iron, so rendered inactive, possesses this property in as high a degree as that produced by any of the methods already described.

Inactive, or, as its discoverer termed it, "altered iron," was first made known by Kier, in 1790; and the method just described of producing it, together with several analagous experiments, appeared in the *Philosophical Transactions* of that date. I am satisfied, however, that they must have been pretty generally overlooked, as I find them nowhere else mentioned; and, in 1837, when Professor Schönbein published the fact, that iron might be brought into this state in nitric acid by the contact of platinum, he and others treated the subject of inactive iron as if it had then been made known for the first time.

With respect to the permanency of these effects on iron, however produced, it may now be proper to say a few words. Whatever hopes of usefulness might have been entertained at the commencement, must have been considerably weakened when it became known that the slightest scratch made on the surface of inactive iron was sufficient to destroy this property, and at once to render it as susceptible of corrosion as ever. In fact the act of wiping the iron with a rough cloth will, in some cases, cause it to regain its former state; although, as already observed, if inactive iron be carefully freed from the acid by repeated washing, and then exposed to ordinary atmospheric influences, it will retain its brightness free from rust for several months; yet for most, or perhaps all, purposes for which iron is necessarily used, it can never be kept free from as much contact as would be amply sufficient to destroy this property. Nor am I aware of any purpose to which it may be applied, with the exception, perhaps, of the negative plates of a galvanic battery—plates of inactive iron being substituted for platinum, while nitric acid must be kept in contact with them during the time the battery is in action. After all, they cannot be much depended on, as the slightest abrasion of one of the plates is sufficient to weaken or neutralise the effects of all the others.

Another application of inactive iron may be mentioned, but attended with only partial success. In 1838, when I became acquainted with Schönbein's paper, I was engaged in the electrotype experiments; and one of the objects I had then in view, was that of coating iron with copper; nor did it require much foresight to see that, if successful, this would be one of its most useful applications. From the action of iron in the usual salts of copper, the difficulties that stood in the way, after numerous experiments, seemed insurmountable, except, indeed, with salts of an expensive character, and with immense voltaic power. The fact, however, that iron might be rendered inactive, seemed to point the way to success, and I accordingly entered on a trial of this method with proportionate ardour. The results were briefly, that I was enabled to coat pieces of iron-wire and nails separately with copper that had been previously rendered inactive, by some of the methods already described; but when operating with a quantity together, to economise time and labour, I was far from being successful, as the least movement of one against the other was sufficient to destroy their inactivity. With much trouble, it is true, I have operated on several at once, by laying them carefully in a basket of platina wire, taking care not to move them until they had received a coating of copper; but there were several obvious disadvantages attending it, that I need not explain; altogether, the trouble neutralised the economic advantages I had thought to obtain. When applied to larger articles, although they are readily made inactive while in the acid, yet they do not retain the property uniformly when immersed in a cupreous solution. This, I am convinced, arises out of that want of uniform texture, as before observed, incident to all large pieces of manufactured iron.

It may be observed, that experiments with iron succeed more perfectly if made with the wire of this metal. This, doubtless, arises from the comparative uniformity of texture, resulting from the process of drawing in the manufacture.

I had given up the subject of inactive iron, when circumstances occurred, in 1841, which led me to it once more. It had relation to an investigation of the conditions under which iron corrodes, with a view to its preservation. The fact that it might be rendered inactive, almost necessarily led me to make a series of experiments in that direction. After repeating all that I then knew had been made, I became desirous of investigating the theory of the action itself—feeling that without this no real step in advance could be made. An adventitious occurrence, or even a blunder, if there be perception enough to take advantage of it, often strikes out a new path; but it is rarely that it gives legitimate progress in one already opened. The theory of inactive, or, as it has been termed, passive iron, at that time occupied the attention of several high authorities in science; one opinion being, that it was due to a molecular alteration in the iron itself; while another ascribed it to an extremely thin coating of oxygen, that surrounds the metal like a varnish, and which prevents the acid from acting so long as it remains undisturbed—the slightest scratch, however, being sufficient to allow the access of the acid. Although this latter opinion seemed to gain the most ground, there being some reason to suppose, from the known properties of platinum in relation to hydrogen, that it might be probable, yet considerable difficulties stood in the way of its adoption. It was not difficult to see, that if the oxygen theory were the true one, there would be little use attempting to go farther—at least, in that direction; and that it presents a barrier to progress, will be obvious without much consideration—it being clear, that it all ends in giving the iron an imperceptible coating of oxygen, no reasonable hope can be entertained of doing more in this direction, except, indeed, attention is turned to paint or varnish, as the thin coating of oxygen, supposed to be the protecting agent, is not only strictly analogous, but reduces the principle, if any, to a mechanical one. On the other hand, should we find the theory of molecular alteration in the iron to be the true one, however partial or little deep-seated, still it affords a distant hope of arriving at the means of altering the structure throughout. In a word, had implicit reliance been placed in the oxygen theory, I should have felt it folly to make another chemical experiment on inactive iron; but being somewhat disposed to doubt the one, while the other did not seem at all established, I endeavoured to imagine a double series of experiments, that might confirm one, or negative both.—First, then, with regard to the oxygen theory, which is held by Dr. Faraday, whose opinions on occult chemical phenomena are entitled to the highest respect. It proceeds, as I apprehend, from a hasty belief in the decomposition of water; nor can I avoid remarking, that chemists too often solve theoretical difficulties by at once predicating the decomposition of water. In the present case—that of inactive iron—water is supposed to undergo decomposition, but the hydrogen, instead of being evolved, is held by the platinum, while the iron is covered by the resulting oxygen; and, the chemical forces being so nicely balanced, further action cannot proceed. I found it exceedingly difficult to imagine experiments that would directly support or disprove this theory; among others, however, one was made, which, to my own thinking, goes far to negative it.

Nitric acid, of the specific gravity of 1300, was tinged blue with nitrate of copper—a slip of clean iron was immersed in it, while in contact with a piece of platinum, when both were immediately withdrawn and plunged into water, and then carefully examined; but no trace of metallic copper could be observed on the surface of either. This was repeated several times, and with the same result. The iron and platinum were again immersed in contact, and allowed to remain so for several hours; when withdrawn, still no traces of copper deposition were observed. The strength of the acid was now reduced a little below the point where the platinum ceases to give protection, when the metals were again immersed in contact, and withdrawn rapidly, as at first; but now *both* of them had received a decided coating of copper. Now, if water had been decomposed, or if chemical action, however slight, had taken place *in the first instance*, one or other of the metals must inevitably have been tinged with copper. Look at it which way we will, there seems no avoiding such a conclusion. If the iron becomes covered with oxygen, a double volume of hydrogen must be evolved, which, in the nascent state, is always said to reduce copper from its solutions; and, if in this case true, it ought to be found on the platinum, if not on the iron. But, be it observed, whenever we reduce the strength of the acid enough to allow action to take place, then we find a deposition of copper is the result.

The next series of experiments were made in a direction to prove, if possible, the molecular theory. They were commenced by testing the value of the several bodies which impart inactivity to iron; and while doing so, some were found capable of inducing it, which I have not seen named in any publication; but, as they threw little additional light on the principle, they may be allowed to pass over, with the exception of palladium.

From all the experiments that had been made hitherto, it appeared as a rule, that those substances only were capable of giving this property to iron, that were themselves inactive in nitric acid. With a view of inquiring to what extent this was true, it was thought probable that a metal not very active in this acid might exert a protective influence on iron, although in less degree than the others. Palladium precisely answers these conditions, as it dissolves in nitric acid at common temperatures, but by no means rapidly, and still less so if the temperature be a little reduced. Accordingly, nitric acid was taken, and the temperature reduced to a little above the freezing point of water. A slip of iron was introduced into it, when the usual action took place; it was then withdrawn, and washed with water, and again immersed, but now in contact with a piece of palladium. No action was discernible. The iron had thus become inactive. Both metals were afterwards allowed to remain in the acid until the following day, during which time the acid had regained the temperature of the room, when it was found that the palladium was being slowly dissolved, while the iron still remained perfectly bright and inactive. This experiment favoured the molecular theory, as I conceive, but those to follow are much more conclusive; I shall, however, first give a popular explanation of what the theory may be said to involve.

In speaking of molecular changes, bodies that are supposed to be subject to them are said to be polarised (having two ends), and the state itself is termed polarity; and, but for the inconvenience that might arise by confounding inactive iron with magnetic, it might be called, not unfitly, polarised iron, supposing the theory to be well founded. A polarised body is one supposed to consist of atoms that have been all alike turned from their usual position by some force. Of course, it is not for a moment supposed that any microscopic power can enable us to perceive such a change, it being only known by the effect produced in the body itself. A familiar illustration may be found in the Venetian window blind. When its laths are hanging horizontally, and nicely balanced, it may be said to transmit light, heat, and air, these having a passage through its apertures. Give them, however, the slightest angular direction, and it still exercises the same properties, though less directly. In this case it may be said to refract light. Were it a chemical body, we should speak of its properties precisely in those terms. But now let the laths be made to touch each other, which the exercise of the slightest force at one end is capable of doing, and it possesses the properties already spoken of no longer. It neither transmits light, heat, nor air, yet its substances has undergone no alteration; and if we allow the laths to represent the particles of a body which has sustained a like suspension of its usual properties, the only rational method of accounting for it is, that a change has taken place in their arrangement. A body, then, supposed to have undergone such a molecular change is said to be polarised, as it is then incapable of exercising some of its usual properties.

Let us now suppose iron to be a mass of atoms, or particles, each nicely suspended in an atmosphere of caloric, and which, in the ordinary state of this metal, are all turned in one direction. In this, its normal state, it is capable of combining with nitric acid and other bodies; but, let us now further suppose that, when its particles come into contact with those of a body having a totally different arrangement, and far more stable, as we are entitled to suppose those of the precious metals are, they will exert a superior force over the mobile atoms of iron, and influence them in their own direction; all that is required being to communicate with those nearest, when the force will be rapidly propagated to the rest. In the case of iron it is evident that this molecular change only extends to the surface, as it requires the presence of the nitric acid to complete the condition; if otherwise, the contact of platinum would produce the effect on iron in any other fluid. These views were sought to be confirmed by the following experiments:—On the hypothesis of molecular action, it was supposed to be probable that heat would be evolved from some one, or all of the bodies present in the process, as we seldom find molecular changes occurring without such a result. Several experiments were made to ascertain this in connection with a delicate thermometer, and the invariable result was a rise of temperature apparently in all the bodies present; so much, indeed, as to be totally incompatible with what could be supposed to have arisen out of the decomposition of even a tolerably large volume of water. It was also ascertained that the larger the mass of platinum and iron employed, as compared with the acid, the higher the temperature became. The result of some of those experiments led to the belief that the nitric acid itself, contributed to this molecular change, and if so, it ought to conduct the force from the platinum to the iron at a small distance. With this object, a short hollow cylinder of platinum was procured, having an interior diameter of half an inch. It was fixed perpendicularly in a platinum crucible, and then filled with nitric acid; an iron wire was then introduced into the interior of the cylinder, care being taken that it *no where touched*.

The object of this arrangement was to surround the iron with the platinum, the more powerfully to influence the inactivity. The result was, that the iron had become as thoroughly inactive as it did by any of the other methods; while it proved the more important fact, that this property may be conveyed to the iron without the absolute contact of the protecting body. I venture to think that the result of these experiments, if not quite conclusive, weighs very much in favour of the opinion that iron, when made inactive, undergoes a molecular change.

The foregoing was read at the Polytechnic Society, as above dated, but was founded on a heap of notes on the subject of iron made in 1841, which were hastily thrown together to meet the exigency of the want of a better paper on that evening. Since then, the theory of inactive iron has frequently recurred to me, and while myself convinced of the truth of the molecular one, yet to leave less room for doubt in the minds of others, I thought of another method of testing it, which, if successful, would put the subject at once beyond doubt. I was the more anxious to do this, as, quite apart from its inactivity, very much depends on our acquiring a perfect knowledge of the structural changes which this all-important metal undergoes in various circumstances. The experiment is an extremely simple one, and I am only surprised that it did not present itself sooner. It was thought that, if the iron suffered the supposed molecular change on the surface only, a vibratory movement of the mass ought to induce it to take place in the acid without the presence of any other substance. With this impression, a slip of iron quarter of an inch in diameter was suspended perpendicularly by one end with a strong packthread, and, while so, a vessel of nitric acid was brought underneath it, and then raised so as to allow the lower end of the iron to dip into it. On this being done, energetic action took place *which was immediately suspended on giving the top end of the slip a smart blow in a perpendicular direction* with a hammer. The iron was then let down in the acid, and remained perfectly inactive during the two days it was kept in it. It also communicated inactivity to other pieces that were brought into contact with it. Than this, nothing could be more conclusive or satisfactory. This experiment was subsequently varied, with, if possible, more interesting results. A wire, like the one formerly used, was suspended in the same manner, but the packthread was now held in the hand; it was then struck at the lower end obliquely with a piece of iron, to cause it to ring, and while so, it was introduced into the acid. No action took place on immersion, but the instant the end of the iron came into contact with the side of the vessel, which had the effect of breaking the vibration, action proceeded most energetically, which, on being instantly removed to the centre, partially ceased; then went on, although less partially; but it was quite evident that, as the effects of the vibration became weaker, the action of the iron on the acid increased. Should it be immersed while under the effects of a slight ringing blow, the action is beautifully illustrative of molecular vibration, bubbles of gas being given off the surface of the iron in intermittent waves. Sometimes this is produced in a slip that has been often used, by a smart perpendicular blow at the bottom of the vessel containing the acid.

Although, as before stated, I felt convinced that the whole molecular mass was put in motion by the vibration; yet, as the surface only was permanently affected, I became desirous of ascertaining, as far as it might be possible, if an action of the interior atoms—so to speak—would affect those of the exterior. I had some difficulty in arriving at a method of ascertaining this; but, after attempting several, the following would seem to afford the best illustration:—A slip of thickish wire was procured, and a notch made in and about it, in the middle, with a file—just leaving the thickness of a packthread, as nearly as possible, in the centre. One end of this wire was made inactive, and left for a time in the acid: it was then held in one hand, while the inactive end was still immersed—then the other end was bent to nearly a right angle, at the part that was notched; the moment this was done, *bubbles of gas were evolved from the inactive end* in the acid, but which almost immediately ceased—it having thus speedily regained its inactivity, when it was again evident that the action was strictly molecular. In making the above experiments, I found much care was necessary not to allow the iron, at any time, to be long active in the acid, otherwise the heat evolved by the chemical action prevents the subsequent experiments from being successful.

So far, then, I leave the theory of the subject with some confidence. A structural alteration throughout the molecules of iron has been long supposed to take place by some, and ridiculed as fanciful by others. This want of unity of opinion has sufficiently prevailed to prevent the fact from entering into practical consideration with regard to engineering matters. It has been already observed, that the discovery that iron may be rendered inactive, must have excited strong, and not unreasonable, hope that, if not the large, at least the smaller, articles that are manufactured of this metal might be made to undergo a similar change, and thus prevent their liability to corrosion; and while thinking so, the somewhat analogous fact, that steel is made to retain the magnetic property must have recurred, and would have the effect of adding strength to the opinion. In the present state of our knowledge, however, the chances of its realisation are not great.—Yet this affords no ground for despair—on the contrary, we are warranted, from the bygone history of science, in supposing that this, at present merely curious, property of iron may yet lead into a wider field of usefulness. We may be able clearly to perceive the leading feature of a great practical application of science—nay, we may be hovering on its verge for years, and yet unable to make the grand discovery itself—not, as too often alleged by the slightly thinking, for want of practical shrewdness in the philosophic mind to which the idea owes its birth, but really in consequence of the non-existence, at the time, of some apparently subordinate, though really essential, part still wanting to give it completeness. Had Columbus lived in the century before the property of the magnetic needle was made known in Europe, he might have had equally good reasons for concluding that India might be reached by sailing westwards. Remnants of tropical vegetation were at all times drifted to the western shores of Europe—in fact, the materials out of which he founded the theory of a vast continent on the other side of the Atlantic were always in existence, and, no doubt, would have been appreciated by his powerful mind: yet it is not hazarding too much to say, that he would not have attempted the discovery in the absence of the compass needle. In 1800, when Wedgwood did more than give the idea of photography, it would not have been possible for him, at that time, to have advanced much farther in the art—simply, because some of the essentials to practical perfection were unknown, or, rather, iodine, bromine, and the hypo-sulphites were, so to speak, not then in existence.

PROGRESS OF SCIENCE.—At the annual soiree of the Leeds Mechanics' Institution, on Wednesday last, Professor JOHNSTONE, of Durham University, in introducing the subject which he had been requested to bring under consideration—"Chemistry and the fine arts applied to the improvement of manufactures"—said, from what had been made by Babbage to do what the mind of man scarcely could do; at least, his invention worked out calculations which the minds of a very few men were able to follow. New dominion had been given to man over dead matter, and not merely over iron, but over almost every other kind of matter. As an instance, it might be observed, that a few years ago a philosopher at Copenhagen remarked that the influence of the galvanic stream turned the magnetic needle. It was thought to be a mere matter of curiosity at the time, but the following up of that idea had resulted in the electric telegraph, a machine which conveyed thoughts like lightning, and would enable them to converse with their friends at Kamschatka almost as speedily as with their friends at the other end of the room. The learned professor then rapidly glanced at several other modern discoveries of science, especially those arising out of the distillation of coal, which not only yielded gas, but naptha and ammonia, some of which had not only led to new applications of India rubber and the manufacture of asphalte, but to the discovery of gutta percha, an article which possessed peculiar properties of its own, and which was likely to beat the tanner out of the market, as it had began to take the place of leather on the soles of our feet.

MANUFACTURE OF IODINE.—This invaluable article, so highly prized by the medical world for its curing qualities in almost every disease, is now successfully made by Dr. Atkinson, of this town, proving to demonstration that Irishmen are capable of vieing with those of France, or any other kingdom, in arts or chemistry. The cost of this article to the faculty in England and Ireland annually is great, owing, it is alleged by the manufacturers, to the great outlay for coals, charcoal, and other materials. The success resulting from Mr. Atkinson's labour, by the use of peat fires, which, he asserts, can be procured at half the cost of coal, shows what an immensity of good could be achieved for our labouring population by employing them in the cutting and saving of peat turf, by which thousands of pounds might be annually amassed in Mayo, were a company formed to carry on this important branch of chemistry, which, no doubt, would meet with due encouragement from the English public, who are now obliged to trade in this article with foreign manufacturers. —*Mayo Telegraph*.

DISCOVERY OF A FOSSIL.—On Wednesday fortnight, a discovery of some interest was made in a field adjoining Barnwell. An elephant's tusk, almost complete, and in excellent preservation, was found in digging a drain, 18 in. from the surface, imbedded in a mixture of mould and gravel. It was removed, the same evening, to the Philosophical School, and it is expected that Prof. Sedgwick will refer to the subject.

DISEASES OF THE SKIN.—MOST EXTRAORDINARY CURES DAILY EFFECTED BY HOLLOWAY'S OINTMENT AND PILLS.—Persons afflicted with scurvy, leprosy, jaundice, or the most inveterate skin diseases to which the human frame is subject, cannot make use of a remedy so certain, safe, and speedy in its cure, as Holloway's ointment and pills, which purify the blood, and totally eradicate such infections from the system. In many parts of the continent, where those distressing complaints are prevalent, these medicines are used as the sovereign remedy—they being equally popular, both at home and abroad, in obstinate cases of scrofula, or king's evil, as also for burns and scalds.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London. 43

CENTRAL HEAT AND VOLCANIC ACTION.

In Mr. Daniel's recent experiments, for obtaining a measure of the heat of bodies at their point of fusion, he invariably found that it was impossible to raise the heat of a large crucible of melted iron, gold, or silver, a single degree beyond the melting point, so long as a bar of the respective metals was kept immersed in the fluid portions. So in regard to other substances, however great the quantities fused, their temperature could not be raised while any solid pieces immersed in them remained unmelted, every accession of heat being instanly absorbed during their liquefaction. These results are, in fact, no more than the extension of a principle previously established, that so long as a fragment of ice remains in water, we cannot raise the temperature of the water above 32° Fah. If, then, the heat of the earth's centre amount to 450,000° Fah., as Mr. Cordier deems highly probable—that is to say, about 20 times the heat of melted iron, even according to Wedgwood's scale, and upwards of 160 times according to the improved pyrometer—it is clear that the upper parts of the fluid mass could not long have a temperature only just sufficient to melt rocks. There must be a continual tendency towards a uniform heat; and, until this were accomplished by the interchange of portions of fluid of different densities, the surface could not begin to consolidate. Nor, on the hypothesis of primitive fluidity, can we conceive any crust to have been formed until the whole planet had cooled down to about the temperature of incipient fusion.

It may be said that we may stand upon the hardened surface of a lava current while it is still in motion—nay, may descend into the crater of Vesuvius after an eruption, and stand on the scoriæ while every crevice shows that the rock is red-hot two or three feet below us; and at a somewhat greater depth, all is, perhaps, in a state of fusion. May not, then, a much more intense heat be expected at the depth of several hundred yards or miles? The answer is, that, until a great quantity of the heat has been given off, either by the emission of lava, or in a latent form by the evolution of steam and gas, the melted matter continues to boil in the crater of a volcano. But ebullition ceases when there is no longer a sufficient supply of heat from below, and then a crust of lava may form on the top, and showers of scoriæ may then descend upon the surface and remain unmelted. If the internal heat be raised again, ebullition will recommence, and soon fuse the superficial crust. So, in the case of the moving current, we may safely assume that no part of the liquid beneath the hardened surface is much more above the temperature sufficient to retain it in a state of fluidity.

It may assist us in forming a clearer view of the doctrine now controverted, if we consider what would happen were a globe of homogeneous composition placed under circumstances analogous, in regard to the distribution of heat, to those above stated. If the whole planet, for example, were composed of water, covered with a spheroidal crust of ice 50 miles thick, and with an interior ocean, having a central heat about 200 times that of the melting point of ice, or 6400° Fah.; and if, between the surface and centre, there was every intermediate degree of temperature between that of melting ice and that of the central nucleus, could such a state of things last for a moment? If it must be conceded in this case, that the whole spheroid would be instantly in a state of violent ebullition—that the ice (instead of being strengthened annually by new internal layers) would soon melt, and form part of an atmosphere of steam—on what principle can it be maintained that analogous effects would not follow in regard to the earth, under the conditions assumed in the theory of central heat?—*Lyell's Principles of Geology.*

The Atmospheric Train.

"What cometh here so silently—
So silently and fast?
A wonder and a mystery,
As spirit on the blast?
I see no floating wreath of steam—
I hear no engine sound:
Like unreal phantom of a dream,
It passeth o'er the ground.

"Oh! hath it very life indeed,
That it advanceth on
With that unvarying steady speed,
And means of motion none?
As felt the Indians when came near
The first-seen ships from Spain,
I feel, like theirs, mysterious fear—
I will not look again."

What! will ye turn your eyes away?
Proud Triumph sweepeth there:
For Man hath bowed beneath his sway
Fire, Water, Earth, and Air!
Yon car is his triumphal throne,
Whereon his pride takes rest—
While elements their ruler own,
And work at his behest.

Oh! 'twas, indeed, a glorious sight,
When Intellect's command
Bade Fire and Water first unite
To bear her through the land:
But pride of power with conquest grew,
Science heard man declare—
"Coy Air shall join her sisters two,
Me o'er my earth to bear!"

Then Intellect with Labour wrought
The mandate to fulfil:
Lo! the fruition of the thought,
The triumph of the skill!
Come where the mighty engine lies—
Come whirling cranks among:
The scene shall bid your pulses rise,
And, answering, throb along.

Fly on—fly on, ye rapid wheels!
On—graceful pistons—on!
Haste—eager haste, the gauge reveals
Your work is bravely done.
How beautiful your motions seem—
How easy, smooth, to guide!
Unknowingly we scarce could deem
Your strength might rocks divide.

On! keep your forward tube air-free,
The pressure is behind,
And the swift car—how silently—
Flies on the winged wind!
Still on—still on! at gradients steep,
That air-borne weight makes mock:
Round giddy curve with graceful sweep—
On—on! it fears no shock!

Oh! gorgeous dreams of Genii's aid—
Bright tales so dear to youth—
How doth your brilliant tinting fade
Beside the brighter truth!
Was ever Fiction dream'd more grand
Than Fact is seen to-day—
That man should issue forth command,
And elements obey?

THE NITRE LAKES OF EGYPT.—In the midst of this sandy waste, where uniformity is rarely interrupted by grass or shrubs, there are extensive districts where nitre springs from the earth like crystallised fruits. One thinks he sees a wild overgrown with moss, weeds, and shrubs, thickly covered with hoar frost. And to imagine this wintry scene, beneath the fervid heat of an Egyptian sun, will give some idea of the strangeness of its aspect. The existence of this nitre upon the sandy surface is caused by the evaporation of the lakes. According to the quantity of nitre left behind by the lake do these fantastic shapes assume either a dazzling white colour, or are more or less tinted with the sober hue of the sand. The nitre lakes themselves, six in number, situated in a spacious valley, between two rows of low sandhills, presented—at least the three which we visited—a pleasing contrast, in their dark blue and red colours, to the dull hues of the sand. The nitre which forms a thick crystallised crust, upon these shallow lakes, is broken off in large square plates, which are either of a dirty white, or of a flesh colour, or of a deep dark red. The Fellahs employed upon this labour stand quite naked in the water, furnished with iron rods. The part which is removed being speedily renewed, the riches of its produce are inexhaustible. It is hence that nearly the whole of Europe is exclusively supplied with nitre, and this has probably been the case for ages; for Sicard mentions, at the commencement of the last century, that then 36,000 cwts. of nitre was broken annually for the grand signior, to whom it yielded 36 purses. By the side of one of the lakes, piled in large layers, was heaped the produce of the last week's labours. My companion had occasion to find fault with the result of the work of one of the villages—the sheikh of the village stood before us—he sharply rebuked him, and to give greater effect to his words he crossed his naked shoulders two or three times with his whip of elephant's skin. The sheikh sprang as nimble as a gazelle into the lake, and received his further instructions beyond arm's length. Such was the impressive discipline which even this Italian, who was a man of gentle manners, considered it necessary to adopt towards these Fellahs. The plates of nitre, after undergoing a preliminary cleansing upon the banks of the lake, are carried to the castle, where, by various processes, they become a dazzling white powder, and in this state it is conveyed in large quantities to Teranneh.—*Tischendorf's Travels.*

INTERNAL HEAT OF THE EARTH.—The high temperature of mines, as compared with the surface of the earth, and the increase of that temperature in proportion to their depth, although not in an uniform ratio, seems to warrant the inference, that the whole central mass of the earth is even now in a state of igneous fluidity; but, on the other hand, we have the fact that the temperature of the ocean diminishes from the surface downwards at the mean rate of 1° in 28 fathoms in temperate latitudes, and 1° in 25 fathoms in the tropics. Further researches will probably identify the high temperature of the earth at great depths with the electric currents. The reasoning of Mr. Lyell against the Leibnitz doctrine of central heat is, to our minds, conclusive. Geological investigations are, of course, confined to a comparatively small section of the earth, and there are but few data for forming even a plausible conjecture of the state of its centre. The upturned strata of the earth expose rocks which, when in their original horizontal position, are in some instances supposed to have been buried upwards of 20 miles below the present surface, but a rupture even of this extreme depth is, as compared with the distance of the centre from the surface (3956 miles), but as the scratch of a pin on the rind of an orange.—*Westminster Review.*

ACHROMATIC GLASSES.—An American paper states, that a tubular telescope has been exhibited at the fair of the American Institute. The glasses were imported from Paris, but were ground and polished by the maker, Mr. Fitz, of New York. The size is 6½ in. by 10 ft. focus; it is intended for Columbia College; has been severely tested on the nebulæ and double stars, saturn rings, &c., and has given complete satisfaction. It is said, Mr. Fitz's glasses are equal to the German, and he is the first American optician who has been so successful.

PROPOSED DUTY ON GAS.

Communications have taken place during the last few weeks, between the Government and persons engaged in the manufacture of gas, relative to a proposed duty of 1s. per 1000 cubic feet of that article, which would produce more than two millions sterling annually to her Majesty's Government. It appears, from the correspondence which has taken place, that while all other companies are taxed, gas companies are entirely free from taxation, and that they have a most enormous surplus profit, owing to the excessive price of their commodity, at present charged, in many parts of the metropolis and its suburbs, at 8s. per 1000 cubic feet, whilst in large provincial towns it is charged at 3s. or 3s. 3d. per 1000 cubic feet. The following is a sketch of 14 metropolitan companies, showing their surplus profits, and the amount of duty it is proposed to levy:—

Name of company.	Surplus profits.	Proposed duty.
Imperial Gas Company	£58,009	£18,204
Chartered	52,985	15,603
London	57,730	14,303
City	52,985	15,663
Brick-lane	36,741	9,102
Phœnix	25,670	7,801
Equitable	28,869	7,151
British	22,117	6,843
South Metropolitan	23,619	5,851
Curtain-road	23,619	5,851
Commercial	22,117	6,843
Ratcliffe	11,058	3,421
Independent	15,745	3,920
Poplar	6,315	1,956

From this it appears, that the duty thus yielded by the metropolitan companies would be nearly 123,000*l.*, and still leave the companies in possession of a surplus profit of 457,500*l.* It may be interesting to show, from one of the companies (take the Imperial, for instance), how these large profits are produced. The yearly consumption of coals by the Imperial Company is 51,100 tons, which 63,875 chaldrons of coke, less 31,938 chaldrons, which produce 14s. per chaldron, or 22,356*l.* 12s.; 51,100 tons of coal produce 485,450,000 cubic feet of gas, from which must be deducted one-fourth as entire loss, there not being more than three-fourths sold to the consumers, making the residue 364,088,500 cubic feet of gas, at 6s. per 1000 cubic feet, producing 109,226*l.* 10s. The same quantity of coal also produces 613,200 gallons of tar, at 1½ per gallon—8832*l.* 10s.; and 562,100 gallons of ammonia, at 1d. per gallon—2342*l.* 1s. 8d., making the total produce of 51,100 tons of coal amount to 137,757*l.* 14s. 8d., from which must be deducted 48,880*l.* for the coals, at 16s. per ton, and 6887*l.* 18s. 6d. for a dividend of 5 per cent. from the profits, which is about 15 per cent. on the paid up capital, after which there is a surplus profit of 76,219*l.* 9s. 2d. The proposed duty of 1s. per 1000 cubic feet would produce from this company alone, 18,204*l.*, after paying which, they would still have a surplus of 58,009*l.* 19s. 2d.

THE NEW COAL MARKET.

On Tuesday the first stone of the New Coal Market, in Lower Thames-street, was laid by Mr. David Allan, in the presence of the committee having the execution of the Act of Parliament for providing an improved site for that building, and under the authority of the Court of Common Council.

The underside of the stone was, in this instance, hollowed out for the reception of the several coins of the realm, which were arranged in a very ingenious manner, upon a glass triangle, on the sides of which were engraved the plan, elevation, and section of the new building.

The triangle was supported on a cut-glass stem, with the Royal and City Arms engraved thereon, and inserted in a glass base, on the surface of which were inscribed, in a circle, the names of the members of the committee, with the date of the laying of the stone. On the four sides of the base were the names of the Queen, the Lord Mayor, the architect (Mr. J. B. Bunning), and the contractor (Mr. Wm. Trego). The glass triangle and stand were placed upon an engraved zinc plate, with the following inscription:—

"VICTORIA REGINA.

"The Coal Market of this city, established by the Act of 47 George III., cap. 68, being small and inconvenient, an enlarged site was provided for a new market, under the authority of the Act of the 9th of Victoria, cap. .

"The first stone of this building was laid on Tuesday, the 14th day of December, 1847, by David Allan, Esq., Deputy, the Chairman of the Coal and Corn and Finance Committee of the Corporation of the City of London."

The committee afterwards dined at the Albion Tavern, where they were provided with a magnificent entertainment by the Messrs. Staples. Several of the principal coal factors and coal merchants were among the guests of the committee.

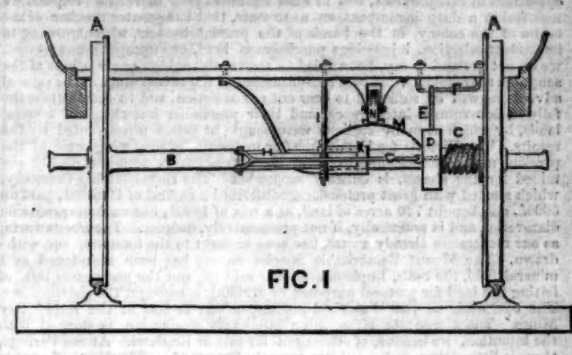
THE INTRODUCTION OF ANTHRACITE.—The following statement illustrates most forcibly how much harder it is to persuade mankind to believe in truth than fiction: and also illustrates, in some degree, the resources of Pennsylvania. It is interesting and amusing to look back to the first attempts made to use the anthracite coal, and to bring it to market. Hon. Charles Miner, of Wilkesbarre, in his published accounts of his first efforts, in connection with Mr. Cist, and other associates, relates some pleasant anecdotes. On the 9th of August, 1814, they started off their first ark from Mauch Chunk. "In less than 80 rods from the place of starting, the ark struck on a ledge, and broke a hole in her bow. The lads stripped themselves nearly naked, to stop the rush of water with their clothes." In six days, however, the ark reached Philadelphia, with its 24 tons of coal, which had, by this time, cost $14 a ton. "But," says Mr. Miner, "we had the greatest difficulty to overcome of inducing the public to use our coal, when brought to their doors." "We published handbills in English and German, stating the mode of burning the coal, either in grates, in smiths' forges, or in stoves. Together we went to several houses in the city, and prevailed on the masters to allow us to kindle fires in their grates, erected to burn Liverpool coal. We attended at the blacksmiths' shops, and prevailed upon some to alter the Too-iron, so that they might burn Lehigh coal; and we were sometimes obliged to bribe the journeymen to try the experiment fairly, so averse were they to learn the use of a new sort of fuel." How like a fable all this seems at the present day! As we sit before our coal fires and think of no other, how little do we realise that 30 years ago Mr. Miner and Mr. Cist were trying the experiment of an anthracite fire at Wilkesbarre, and wondering whether they could not float an ark load of the coal to Philadelphia! Now we are reckoning the coal trade in millions of tons! In the Schuylkill region the effort was made a little earlier. In 1812, Col. George Shoemaker loaded nine waggons with coal at the place now known as the Centreville Mines, and proceeded to Philadelphia. "Much time was spent by him in endeavouring to introduce it to notice, but all his efforts proved unavailing. Those who deigned to try it, declared Col. Shoemaker to be an imposter, for attempting to impose stone upon them for coal, and were clamorous against him. Not discouraged by the sneers cast upon him, he persisted in the undertaking, and at last succeeded in disposing of two loads for the cost of transportation, and the remaining seven he gave to persons, who promised to try and use it, and lost all the coal and charges.—*Miners' Journal.*

THE IRON TRADE IN AMERICA.—We extract the following from the letter of a correspondent in the *Birmingham Journal*:—"The stocks of iron in this market and in Philadelphia are very small. The rage for investing money in the manufacture of this article appears to increase; and though we occasionally see one or two iron-works advertised for sale—the result of failure—the majority seem to be paying well, and giving satisfaction to the shareholders. The following synopsis of the present state and future prospects of the iron trade in this country, may not be uninteresting to some of your manufacturing readers. I extract it from a late publication of Dr. Feuchtwanger's, a gentleman who has very frequently contributed information to the columns of the *Mining Journal*, and whose time and talents are devoted to the discovery of mines, the analysis of ores, and the interest of the iron manufacture generally:—The quantity of pig-iron produced in the United States, in 1840, was 53,908 tons; while, in 1847, the quantity of pig-iron made here exceeds 500,000 tons. The latest improvements, by hot-blast and other contrivances, have increased the product of pig-metal 50 per cent.—so that we may reasonably expect the product of pig-iron to be about 700,000 tons, which, at the average price of $35 per ton, of No. 1 pig-iron, would be a revenue to the States where it is produced of $17,500,000, the principal part of which goes to the States of Pennsylvania, New York, and Tennessee. The State of Missouri, with its inexhaustible deposits of superior iron, has as yet not produced any pig-iron, although the city of St. Louis, containing 12 of the largest foundries in the Western country for the construction of machinery, steam-boats, &c., has been obliged to import its pig-iron from great distances on the Ohio, Tennessee, and Cumberland Rivers. The Iron Mountains, which are capable of furnishing 600,000,000 tons, are beginning to supply, in a small measure, the demand; but the freight of transportation from the interior, nearly 50 miles, enhances its expense. Within a few months, however, a company of some enterprising St. Louis merchants, have opened an immense deposit of rich iron ore contiguous to the Mississippi River, which bids fair to supply the demands for pig-iron in St. Louis, and the Missouri and Upper Mississippi Valleys. I allude to the St. Louis and Birmingham Iron Company, a distance of two miles from the town of Birmingham, and 120 miles below St. Louis. The iron ore which I have seen, and of which I possess specimens, is, I should judge, 60 per cent., and is easy to flux. The coal beds on the opposite shore, in Illinois, yield the most inexhaustible supply of superior bituminous coal. Charcoal, as well as stone coal, can be had at the furnace for about 3 cents per bushel; and there is no reason why the company should not produce 100 tons of pig-iron per week, by each furnace, and why they cannot erect four furnaces, so as to produce 400 tons of pig-iron, worth in St. Louis $40 per ton.

GEOLOGY OF VERMONT.—Prof. C. B. Adams, geologist to the state of Vermont, has presented to the cabinet of Amherst College 3000 specimens of the geology and mineralogy of that state.

SELF-ACTING BREAK FOR RAILWAY CARRIAGES.

INVENTED BY MR. VINCENT YARDLEY, THORNEY-STREET, BLOOMSBURY.



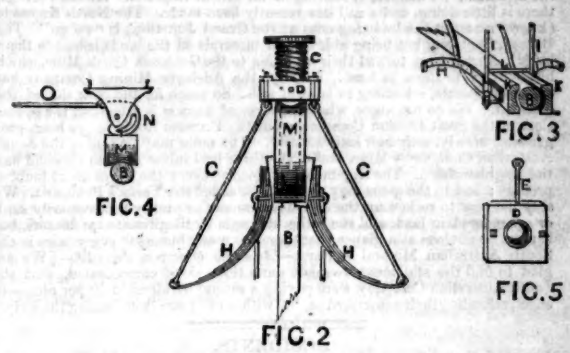


Fig. 1.—View of the break, looking under the end of the carriage.
Fig. 2.—Vertical view of the break.
Fig. 3.—Sectional view of the break.
Fig. 4.—The eccentric lever, rod, and spring.
Fig. 5.—The block and suspending-rod.

The reaction of the buffers, when the driver checks the engine, brings this break into action. When the momentum of the carriages, as each comes close up to the one preceding, presses on the buffers, these, in their turn, press on the rod, O, which turns an eccentric lever, N—and thus, by the flattening and elongation of a spring plate, M, which is hinged at one end to the connecting rod, L, between the rods, I, I, and is suspended by a staple through a wedge-shaped slit in the eccentric lever, which is backed by the counter spring of the buffers when not in action; an elm block, D, with an iron worm, surrounding the axle, B, is pushed towards the screw, C, on the end of the same axle; and, as the screw enters the worm, in order to lock the axle, the block, by means of a pair of iron rods, G, G, also brings a strong pair of carriage springs, H, H (which are suspended by, and turn on, the rods, I, I) into action on a pair of friction blocks, K, K, attached to the large or butt end of the same springs, which grip the axle and retard its motion till the climax of the lock is reached by the sliding of the block rod, E, along a rail, F, as the screw enters, when the worm, having arrived at its limit on the screw, arrests the motion of the axle and the wheels. A reversal of a few yards will be sufficient to unlock this break.

TAYLOR'S IMPROVEMENTS IN LOCOMOTIVE ENGINES AND RAILWAY CARRIAGES.

[Patent dated June 3, 1847. Patentee, Mr. George Taylor, of Holbeck, near Leeds. Specification enrolled December 3, 1847.]—*Mechanics' Magazine.*

The patentee states that his invention consists: Firstly—In certain improved arrangements of the steam cylinders of locomotive engines, and the parts which communicate the reciprocating motion of the pistons of the cylinders to the axle or axles of the driving-wheels, which arrangements have for their object to concentrate the driving power of the actuated pistons, so as to communicate an even rotating motion to the driving-wheels, or to distribute the moving power (before concentrating it), in an even and uniform manner to one, two, or more pairs of wheels. The advantages which Mr. Taylor states he believes to result from this part of his invention are, diminished wear and tear of the engine, and the attainment, with safety, of a greater degree of speed, in consequence of the decreased amount of oscillation of the locomotives. The construction is as follows:—Above the boiler, and near the smoke-box, are placed, horizontally and in juxta-position, two steam cylinders of equal capacity, each having its piston furnished with cross heads sliding in guides supported by the frame of the engine. The pistons are connected by rods to two cranks, which are attached on either side to a wheel having cogs or indentations on its periphery, and which gears into another wheel fastened on the centre of the axle of the driving-wheels. The axle is placed above the boiler, and allows of the employment of driving wheels of larger diameter (say from 10 to 15 ft.), with even a diminished amount of oscillation, in consequence of the weight of the engine being brought near the line of rails. All the wheels may be made to drive by being coupled in the ordinary manner. In order that the cog-wheels may work properly, and the bearing-springs of the engine act freely, the guides, in which are supported the journals or axle-boxes of the driving-wheels, are made slanting. Two modifications of the mode of connecting the piston-rods of the steam cylinders with the axles of the driving-wheels are specified by the patentee. The first consists in forming a slot in the centre of each of the piston-rods, in which works a short vibrating link, connected to a vertical frame on either side of the engine, which is made fast underneath the boiler by means of a pin, on which it vibrates—and in connecting each of these vibrating vertical frames by rods as is usual with the bosses of the driving-wheels, or in attaching one end of a connecting-rod to the outside end of the cross head of the piston-rod, and the other to the boss of the driving-wheel. Secondly—This invention has reference to the construction of an apparatus applicable to the locomotive, tender, and carriages, which serves to retard the progress of the train when necessary, and to support, in the case of the breakage of an axle, the weight of the carriage. To effect this, two levers are made fast to the bottom of the carriage in such manner as to allow of their acting freely, and have each at the outer end a flanged skid placed directly over the line of rail. These skids have on the under surfaces blocks of hard wood with the grain placed vertically, and are moreover connected by a strong spring. From the centre of this spring rises a vertical shaft, consisting of two pieces joined by a threaded connection, whereby it can be lengthened or shortened, as required. The top of this shaft is forked, and has between the prongs at top and bottom two anti-friction rollers; between these rollers is a cam, fastened to a horizontal rod, which is made to rotate by apparatus brought under the control of the driver or guards, after any ordinary and well-known means. When the longest radius of the cam is brought to bear upon the lower anti-friction roller by means of the rotating of the horizontal shaft, it follows that the vertical shaft is forced downwards and the flanged skids thereby depressed on to the line of rail which they bite, and thus retard the progress of the train. The flanges serve to retain the carriages on the line of rails, and the skids to support the carriage in the case of breakage of an axle; but, in order that the vertical shaft may be relieved from the weight of the carriage, stops are inserted in the lower part thereof at the most convenient point, against which the skids catch. Thirdly—The patentee proposes to divide the tender horizontally into two parts, using the upper or open portion for coals, and the lower to contain the water, and to pass the axle of the wheels through the water or above it, in order that the weight of the tender, as in the case of the locomotive before described, may be brought nearer the rails. Fourthly—To employ axles for railway carriages composed of two pieces, one solid and the other tubular, to slide over it; one of a pair of wheels being attached to each piece, so that they may revolve independently of each other.

ANOTHER ROTARY ENGINE.—Messrs. Dunham and Co., of New York, have constructed a new description of rotary engine, which is stated, in a New York paper, to be superior to anything yet invented—having a solidity and steadiness of motion the writer never observed before in a rotary engine when loaded. There is, unfortunately, no description—all we can learn is, that it is like a drum, 4 ft. long and 12 in. in diameter. We have also been informed, that Mr. Mackintosh is about bringing out another new rotary engine, which, it is said, will be even superior to that of Mr. E. Galloway, recently patented—a description of which appeared in the *Mining Journal* of the 13th November.

OAKUM PICKER.—The *Kennebec Journal* (America) says, a machine has been constructed here for picking oakum. It will pick 50 lbs. in 30 minutes, and can be worked by hand, horse, water, or steam-power. The quantity, which can be picked by the old hand process, is not above 70 or 80 lbs. per day.

MINING IN SOUTH AUSTRALIA.

As we have often felt a pleasure in recording the commencement of mining operations in this province, and in some instances their successful progress, we now feel it a duty incumbent on us to state, that the greater number of the mines of the colony, in the hands of the present holders, whether owing to imprudent selection, injudicious purchases of land, or improper management, we do not pretend to say, have failed to answer the golden expectations of the sanguine shareholders. A bare recapitulation of the actual state of the several adventures will be sufficient to bear out our assertion, and to demonstrate the folly of Government interference, and their pretended knowledge of mineral lands, by which so many sections were bought at prices unwarranted by the results. The Victoria (gold mine), after undoubtedly producing some of the precious metal, and seeming to justify the extraordinary premium readily obtained for the shares, is entirely suspended. The Royal Mining Company, which started with great pretensions, subscribed a capital of 100,000*l.*, paid up 5000*l.*, and bought 720 acres of land, at a cost of 1800*l.*, has made no profitable discoveries, and is practically, if not prospectively, defunct. The Poonawurta, as our readers are already aware, has been brought to the hammer, and withdrawn. The Mount Remarkable Special Survey has been abandoned as a mineral field, the tools, implements, &c., sold off, and the proprietors talk of letting the land for pastoral purposes, or dividing it amongst the shareholders. The operations at the Wakefield are suspended; as also at the Rapid Bay Mines. The Montacute Mine, after being very productive, is stopped, with the intention, we believe, of offering it for sale in England. At the Paringa, there is little doing, and a call has recently been made. The North Kapunda (known amongst the knowing ones as the Grand Junction) is "no go." The Barossa Company not being able to find minerals on the lands leased to them by Mr. Angas, have turned their attention to the Greenock Creek Mine, which has been let to them on lease. Finally, the Adelaide Mining Company has ceased to operate, intending to lease or sell. So much for the dark side of the question. We do not know what measures of success is attending the operations of the great London Company; but the Princess Royal is, we hear, progressing slowly, although satisfactorily. The same may be said of the South Australian Company's Mine, and of the three lead mines at Glen Osmond and the neighbourhood. The Kapunda is as good as ever; the Burra an undoubted prodigy; and to the gems may probably be added the Yorke's Peninsula. We stay not now to reckon up the enormous amount of money unnecessarily sunk or squandered in land, and the futile attempts by illegitimate speculators, but it must be obvious at a glance that there are many blanks to every prize in the South Australian Mineral Lottery.—*Adelaide Observer, June* 12.—[We are glad to find the statement we made some time since corroborated, that the South Australian Company were paying a second dividend of 50 per cent.—in effect, refunding their subscribed capital within two years from issuing the scrip.]

ACCIDENTS.

Rowley.—Two brothers, named Parsons, were dreadfully burned by an explosion at Mr. Barr's Colliery; F. Smith was also injured by the same accident.

Brierley Hill—Moor Lane Colliery.—A miner, named Tibbetts, was ascending the shaft of the pit with a companion, when, from want of steam, the engine stopped, and the skip became stationary, at a great height from the bottom. Being overcome by fire-damp, the poor men fell out, and Tibbetts was so seriously injured, that he died; the other man is likely to recover.—Another accident, somewhat similar in its character, occurred at a white stone pit in Farthing Lane, by which a miner, named Samuel Danks, was dashed to pieces. The unfortunate man was about stopping into the skip to descend the pit, when the runner slipped, and he was precipitated down the shaft—a depth of 140 yards. He was literally dashed to pieces, and his remains were gathered up, and removed in a sack, previous to interment.

Rowley Regis—Death from Falling Down a Pit Shaft.—An accident, of the most distressing kind, happened at a pit belonging to Mr. Hackett, situated at Whiteheath Gate, by which William Woolton was instantly deprived of life. It appears that the deceased and two others were ascending the shaft, when, on coming to the top, they found there was no one to push the waggon under the skip. In order to do this, the deceased attempted to leap upon the pit bank, but his foot caught the edge of the frame, and he fell down the shaft, a depth of 150 yards, and was, doubtless, instantaneously killed. Had the unfortunate man waited a very short time, the engineer would have been in attendance to push the waggon under the skip to his relief.

Lanhrit.—T. David was sadly injured by the falling of a quantity of coal and rubbish from the top of the pit.

Spital Tongues, Newcastle.—As W. Watson was at work, a stone fell from the roof, and, unfortunately, killed him.

Fatal Colliery Accident at Audley.—On the 2d inst., Thomas Dale, who was employed as a loader in the Watermill Pit, at Apedale, was seriously injured whilst at work by a fall of coal: he was conveyed home, where he died on Tuesday.—A similar accident occurred on Monday, at the Hayes Wood Colliery, to Samuel Spencer, a young man 28 years of age. Spencer was at work, when a large quantity of base, which had previously been considered quite safe, fell, burying the unfortunate man beneath the mass: when he was ultimately got out, life was found to be quite extinct.

Darlaston.—H. Grice was killed by a fall of coal at Messrs. Bagnall and Sons' Colliery.

The Colliery Accident at Harwood, near Bolton.—An inquest was held on Saturday, at the Britannia Inn, Harwood, before T. F. Dearden, Esq., upon the bodies of W. Smith, aged 43; John Ramwell, 16; and Wright Jackson, who were killed at the New Pit, Harwood, on the 8th inst., as noticed in our paper of Saturday last. Mr. Gaskell appeared to watch the proceedings on behalf of Mr. Hardcastle, and Mr. W. P. Roberts for the colliers. Mr. Roger Hampson, surgeon, described the state in which the body of W. Smith, one of the colliers, was when taken out of the pit. There was a fracture on his left leg, between the ancle and knee, and both bones are fractured. There is also a severe bruise on the right temple, and a dislocation of the vertebræ.—By Mr. Roberts: The bruise upon the head was not important. I should think the cause of death was from the fracture in the back.—Mr. Roberts said, he should make application that a piece of the rope and of the fastening should, with a copy of the depositions, be sent to the Secretary of State.—Abraham Pilling was then sworn and stated, that he was a miner, 22 years of age, and had worked in a coal mine about 14 years at Brownlow Field, Harwood, and Turton. The coal mine at Harwood belongs to Mr. James Hardcastle. The deceased, William Smith, was a miner, and met with his death on Wednesday morning last. He does not know if it is the duty of the banksman to be there before the tub goes down, nor of any printed orders or regulations. The waggon is not over the pit when we get into the tubs. The tubs are level with the pit's eye for us to stride into them. On that morning I, and five others, went down in the tubs about six o'clock. There were three in each tub. The tubs were let down and wound up again before we got in; but, as usual, they were empty. James Howarth, the engineer, let us down. The miners are let down and wound up slower than the empty tubs or coal. Witness did not discover any thing wrong until within about 4 ft. of the bottom, when they dropped down faster than usual, and our lights were put out. I can give no opinion as to the speed in going down. When we got out, the usual signal, by knocking at the iron rod, was given for them to go on again. When coals are to be wound up, they knock once; and when colliers want to come out, they knock three times. The tubs came down by five minutes afterwards, very quickly. He could hear, but could not see them. Seven men came down with the tubs, and they were all hurt, and two of them killed. He could not see them for want of a light till about 10 minutes after the accident. Smith was then dead, and he had not spoken previously. The tubs were both broken, and Smith lay under the rope. The others were Wright, Turner, or Jackson, William Smith, Thomas Ball, John Entwistle, William Collier, and John Ramwell. Ramwell was also dead, but none of the rest. Has never known more than seven colliers go down the mine at once.—By Mr. Roberts: The tubs we descend in are the same as those used for bringing up coals. About 400 cwts. are brought up in two tubs.—By Mr. Gaskell: We have been grumbled at for so many going down at once. Has heard the colliers say, that they had orders for not more than two to go down at once.—Thomas Harmer, a young man, stated that he never knew six men go down at one time before that morning, the usual numbers being four and five.—Thomas Ball, a boy of 14 years of age, has heard the manager say, that not more than four should go down at once, but has seen seven both go down and come up at once. On this occasion seven went down, and witness was in the tub with John Entwistle and his brother, who has both legs broken. When they had got about 15 or 20 yards down, our speed began to increase. Smith said, "Oh lads, what a fall we should have, so many of us, if the rope was to break;" and he had scarcely spoken before it began to slip, and he then called upon us to stick.—witness became insensible, and does not recollect anything afterwards. All were either hurt or killed with the exception of himself.—John Davenport, James Pilling, and John Ramwell, proved the fastening of the rope, and believed it to be quite safe.—Mr. Heston, the manager, gave it as his opinion that the rope had been cut. Other evidence of a similar nature having been given, the inquiry was adjourned till Friday.—*Manchester Examiner.*

CORNISH STEAM-ENGINES.

The number of pumping-engines reported for the month of Nov. is 28—the quantity of coals consumed being 1783 tons, lifting, in the aggregate, 17,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 53,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—(The particulars will be given next week.)

STEAM-ENGINES DEFINED.—In a recent work on the steam-engine by John Bourne, resident engineer on the Leeds and Thirsk Railway, the following answer is given to the question:—"In what way would you class the various kinds of condensing engines?" "A.—Into single-acting, rotative, and rotatory engines. Single-acting engines, are engines without a crank, such as are used for pumping water. Rotative engines are engines provided with a crank, by means of which a rotative motion is produced; and in this important class stand marine and mill engines, and all engines, indeed, in which the rectilinear motion of the piston is changed into circular motion. In rotatory engines the steam acts at once in the production of circular motion, either upon a revolving piston or otherwise, but without the use of any intermediate mechanism, such as the crank, for deriving a circular from a rectilinear motion. Rotatory engines have not hitherto been successful; so that only the single-acting engine or pumping, and the double-acting or rotative engine, can be said to be in actual use. For some purposes, such, for example, as forcing air into furnaces for smelting iron, double-acting engines are employed, which are nevertheless unfurnished with a crank; but engines of this kind are not sufficiently numerous to justify their classification as a distinct species, and, in general, these engines may be considered to be single-acting, by which no rotatory motion is imparted. Q.—Is not the circular motion derived from a cylinder engine very irregular, in consequence of the unequal leverage of the crank at the different parts of its revolution? A.—No: rotative engines are generally provided with a fly-wheel to correct such irregularities by its momentum; but where two engines, with their respective cranks set at right angles, are employed, the irregularity of one engine corrects that of the other with sufficient exactitude for many purposes. In the case of marine and locomotive engines, a fly-wheel is not employed; but for cotton spinning, and other purposes requiring great regularity of motion, its use with common engines is indispensable, though it is not impossible to supersede the necessity by new contrivances."

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the 18 fm. level end, west of Slob shaft, is rather more irregular than last reported; it is still worth about 8*l.* per fm., and looking best for lead in the bottom of the level; in the stopes, in the back, behind this end, the lode is improved, worth 10*l.* per fm.; the stopes, in the bottom of the level, look much the same as last reported, worth about 8*l.* per fm. From the appearance of the lode, taking down in several parts of this level, I consider it right to resume driving the 28 fm. level end west. The stopes, in the back of the 18 fm. level, over Doyle's, look well, worth from 20*l.* to 25*l.* per fm. The 12 fm. level ends, east and west of Slob shaft, are looking much the same as last reported, worth about 6*l.* per fm.; we have had a discovery in sinking a winze in the bottom of the 12 fm. level, on the middle lode—it is about 2 ft. wide, and worth about 10*l.* per fm.; this is about 20 fms. west of the stopes, on the middle lode, in the bottom of the 12 fm. level; the winze is down about 3 fms. from the level; the lode in the stopes, under the 12 fm. level (middle lode), is worth about 6*l.* per fm. We hope to have another cargo of 40 tons of lead ready for shipment about the 10th of Jan.—Dec. 11.

BEDFORD UNITED.—At Wheal Marquis, we are still driving in the cross-course in the 90 fm. level east; the lode in this level west, on the south lode, is 2 ft. wide, but not so productive as last reported. The lode in the 80 fm. level east is 2 ft. wide, composed of spar, mundic, and good stones of ore; in Hooper's winze, in this level, the lode is without alteration. The lode in the 70 fm. level east is 2 ft. wide, producing stones of ore; Harvey's winze, in this level, is suspended, in consequence of the sudden increase of water; in the cross-cut, driving south, in this level, the lode is not yet reached; the pitches on the whole are looking much the same as for some months past. The lode in the 25 fm. level, east of the south engine-shaft, is 16 in. wide, composed of spar, with spots of ore; there is no alteration worth noticing in the adit level east on this lode.—Dec. 14.

CALLINGTON.—The lode in the 25 fm. level, driving west from Kelly Bray engine-shaft, is 18 in. wide, composed principally of black-jack and mundic, with spots of copper ores. In the 50 fm. level, on this lode, we have driven through the cross-course, which is 7 fms. wide; and, from the inclination of the lode in the rise, back of 70, we calculate one heave of nearly 20 fms.—we have turned house, and the ground is soft for driving. In the 70 east the lode is 2 ft. wide, and worth 30*l.* per fm.; in the rise the lode is 2 ft. wide, producing stones of copper ores, and looking more promising. In the rise, in the back of the 100 fm. level, south, on the lead lode, we have a good branch of ores; the ground we are opening will work at from 3*s.* to 4*s.* in the *l.* In the 90 fm. level the lode is rather disordered, producing silver-lead ores. At the south mine, in the 125 fm. level, driving south, from Johnson's engine-shaft, the lode continues productive, leaving tribute ground; in the north end the lode is 1 ft. big, intermixed with silver-lead ores. In the 112 south we are opening tribute ground; in the north end no lode has been taken down. In the 100 fm. level north the lode is 1 ft. big, the back will work at a moderate tribute. In the 90 fm. level the lode has not been taken down. In the 80 fm. level the lode is small, producing silver-lead ores.—Dec. 13.

CARADON WHEAL HOOPER.—No doubt but that some of the distant shareholders have been anxiously expecting to see a report from me in the *Mining Journal*, concerning the last lode cut to the 50 fm. level, south of the shaft, the improvement that has taken place in the mine, with the operations in progress; by way of apology, I beg to state, that it is not through any wilful neglect on my part, I assure you, and it is my greatest pleasure to give the most speedy intelligence of good news to my employers and co-adventurers in this adventure, but I did not wish to exaggerate—therefore, I thought proper to defer giving a report until the men had cut through the lode; this being completed, I am now in a position to give you a full and correct account of all the particulars, with the prospects we have before us—they, I can with confidence say, are very cheering, and warrantable of a lasting and paying mine to the shareholders. I am much pleased to see the ore making to a deep level, I would rather see it to the 50 than the 20, especially as I find the lodes to enlarge as we get down; the lode before referred to at surface is not more than 1 ft. wide—to the 50 it is full 3 ft. wide, and one of great promise; in the back, and for half-way down, the end going east is worth from 10*l.* to 12*l.* per fm., and promising a great improvement in a short distance driving, as this will shortly meet with another lode east of the present end; the copper it contains is of a rich quality, and forms a strong body—that is, I mean it is not very draggy, but solid; the matrix is a beautiful blue peach, felspar, prian, quartz, some large vughs, which emit fine specimens of rich copper; I wish you to understand that this is not the Daw's, or large lode we have been driving to cut—that is still further south; it appears not to be many feet off from the one before alluded to—consequently, I thought proper to suspend operations on the lode for a week, to drive south to the large lode, as it has been expressed by many practical men that it will be a paying lode in this level; I think there are not many feet further to drive to cut it, from the appearances of the ground, and the quantity of water issuing from the end; when this is completed, I hope to be in a position to send you some more good news. We have this day resumed the sinking of the shaft to go as deep as the 60, where I expect to have as good a mine as this district can produce—the indications are of that character to warrant such; in sinking 7 or 8 fms. I expect to meet the granite, and the last lode we cut to the 50 fm. level; at that point I expect to find a good lode; I hope the ground will prove favourable—I cannot say much about it as yet, as we have but just cut through the ironstone. The ground in the cross-cut north to the 50 is much improved; we are now giving 9*l.* per fm., whereas before it cost 13*l.* per fm.; I hope to see this lode in about three or four months, where I may reasonably expect a course of ore, seeing so many branches traversing the country we are excavating; the stratum is a beautiful rough granite, congenial for copper; the end west, on cannter lode, was reset on Friday last to two men, to drive at 2*l.* 2*s.* per fm.; in this end the granite appears about 2 ft. up from the bottom, and is rising 1½ ft. in a fm.; in this granite there is as kindly a lode as I ever saw—it is very mundicky at present, with a deal of copper disseminated through the whole of the lode, which is full 2 ft. wide, with occasionally good stones of copper; the lode appears to improve as we get on with the driving operations; if it continues to improve as it has these last two days, at the end of the men's extent, I shall put on greater force.

COATLITHE HILLS.—During this week the men have been employed in driving the level east from A shaft. The bottom of the old level, cut into some time since, is about 2 ft. higher than the bottom of our present end. The vein, in the back of the old level, is much wider than it has been hitherto; and, being fully convinced that water was the means of deterring them from exploring further into the hill, I fully expect that, on getting to the end of the old workings, something will be found worthy further pursuit.—Dec. 11.

CUBERT SILVER-LEAD.—The ground in the engine-shaft is pretty much the same as it has been for some time. The lode in the 35 fm. level east is at present about 18 in. wide, composed of spar, mundic, and a little lead, but not worth saving; the 35 and 25 fm. levels west average about 18 in. wide, and of much the same nature as the 35 fm. level east. In the 15 fm. level west the lode is 1 ft. wide, at present poor, but a very promising end. The tributers are working as usual, and the pitches in general look very encouraging. We sampled our lead ore on Thursday last, computed 20 tons.—Dec. 11.

DEAN FRIOR AND BUCKFASTLEIGH.—We are sinking the engine-shaft with all possible speed; the strata is killas, of a very promising character, and congenial for ores. In sinking, we have discovered a bunch, about 5 in. big, dipping towards the lode, composed of spar, mundic, iron, and some spots of yellow ore—which are good indications. In the bottom end west, the lode is 3 ft. wide, composed of capel and spar, carrying a string of flookan. Near the hanging or south wall, the lode has a very promising appearance, and the more I see of it the better I like it; for I am of opinion that, by extending the levels under the high ground, or hill, the lode will be productive of ore. The lode in the rise at the back of the 10 fm. level still maintains its size, and is of a promising character, although not rich. I intended to have made the alteration as to fixing the new line of launders, with some alteration in connection with the present line, in order to take the water over the 24-ft. water-wheel; and, by doing so, we shall be able to remove the drum from the present drawing-wheel, or the intended stamps wheel, to connect to the 24 ft. wheel, for drawing the attle and work from underground; but, in consequence of the late abundance of rain, I find it will be better to wait, and take the advantage of a few dry days—for, in doing so, we shall be able to make the alterations, as I hinted before, without hindering the men in sinking the engine-shaft; for I am very anxious to get the shaft down to its intended depth, to cross-cut to the lode, and to extend the levels, &c., being so desirable an object.—Dec. 14.

DEVON AND COURTENAY CONSOLS.—Our engine-shaft is now down to the level of the deep adit. In this level, we have commenced driving our cross-cut, to intersect the lode, which we calculate, from the underlay of the lode seen in the 30 fm. level, will be about 8 fms.; the ground, at present, appears favourable for driving. The lode in our deep adit level is 18 in. wide, composed of mundic and spar, with good stones of lead and copper ore. We have, at present, only one pitch working on the north lode, which is producing some good work for lead. The men that worked the other pitch are dressing their last month's ore.—Dec. 14.

DRAKE WALLS.—Brenton's engine-shaft is still as good as in my last report, worth full 20*l.* per fm. The end under the 50 arch, east of Brenton's shaft, tinny, but not rich. In the stopes, east of Brenton's shaft, below the 40, good work; in the 40 end, west of Brenton's shaft, under the arch, good work; in the 40 end, west of machine shaft, under the arch, good work—these ends will be communicated in the course of a week; in the stopes, west of machine shaft, below the 40, good work; in the stopes, east of machine shaft, below the 40, good work. In the stopes, east of machine shaft, below the 33, good work, ground easy for stoping. In the 33 end, east of machine shaft, under the arch, not so good as last reported. We have now about 40 men stoping, and 21 driving and sinking, which will give us 80 cubic fms. per month, and we are now in a position to break 100 fms. per month; but had not sufficient driving power to keep off the stuff—therefore, I strongly recommend a drawing apparatus being attached to Brenton's engine, which will draw all the stuff from the western part of the mine, and by so doing give us a surplus power in our machine wheel for crushing, which will be the means of increasing our returns, and enable us to economise our water for dressing, and also our expenses in dressing, the particulars of which I shall submit to Mr. Johnson. We intend to sample, the 19th inst., 25 tons of tin for last month; the list of our selling of yesterday you will get from Mr. Matthews.—Dec. 11.

EAST CROWNDALE.—The ground in our engine-shaft continues to be favourable for sinking, being in a strata of blue killas. We have sunk the past week 5 ft. 6 in. The end, in the 47 fm. level, driving east, on the north lode, has very strikingly improved in appearance in the past week; the lode is about 20 in. wide, composed of a leader of good copper ore, 4 in. wide, spar, capel, and peach, spotted with copper; from its general appearance, I fully expect a much greater improvement in the ensuing week; the lode in the adit level, driving west, at Rix Hill, continues just as reported on for some time past—a large kindly lode, with good stones of tin at times, near 3 ft. wide, composed of capel, peach, spar, mundic, and tin; in the cross-cut south, we have passed through the lode mentioned in my last report—it is about 18 in. wide, but does not contain any mineral worth saving; the ground, to the south of this lode, is soft, white killas. We have commenced a new engine-shaft in the centre of the sett, on the Rix Hill lodes, in the midst of the most extensive of the old men's working, and to-day have broken some excellent stones of tin from one of the middle lodes, which will continue in the shaft for several fathoms sinking, and will, undoubtedly, pay its own costs.—Dec. 11.——I have just been underground, in the 47 fm. level, north copper lode, and broke the best pile of work I have seen in the mine; the leader of ore is 7 in. wide, looking capital; the end is worth more than 10*l.* per fm.—Dec. 13.

GALLOWAY.—In conteaning upon the north and south lodes, we have traced it to within about 50 fms. of the east and west lode, where it is yet gathering strength both in gossan and spar. Our chief attention, however, has been called to the open cast on the latter lode, where we expect to find the intersection in the course of the coming week; the north and south lode is not less than 7 ft. wide, with a deal of gossan; the east and west one appears wider; but we cannot say the exact width—it has a deal of prian, flookan, and spar.—Dec. 11.

GREAT MICHELL CONSOLS.—The lode in the sump-winze continues 5½ ft. wide, producing some saving work. In the 35 fm. level, west of the sump-winze, we have, during the past week, intersected another cross-course, about 1 ft. wide, dipping east 2 ft. in a fathom, which has thrown the lode a little to the right hand, or northward—the part of the lode, being carried 4 ft. in width, is without important alteration, containing abundance of very strong mundic, with black, grey, and yellow ore, still opening tribute ground.—Dec. 14.

HOLMBUSH.—The ground in the 132 fm. level, south of the diagonal shaft, is favourable for driving. The ground in the 120 fm. level, west of the great cross-course, and south-west of the slide, is also favourable. The stopes in the back of the 120, south of the old level, and east of the great cross-course, will produce 2½ tons of ore per fm. The lode in the rise above the 110 fm. level, south, on the lead lode, is 2 ft. wide, composed of quartz and lead, worth 5*l.* per fm., with favourable ground for rising, and we hope to effect a communication with the level above this month. The lode in the 100 fm. level south is 4 ft. wide, composed of quartz and stones of rich silver-lead ore, saving work. The tribute pitches, in the back of this level, are producing a fair quantity of lead ore. The lode in the 90 fm. level south is 2 ft. wide, composed of flookan and stones of lead.—Dec. 4.

KIRKCUDBRIGHTSHIRE.—The lode in the 50 fm. level end west is 4 ft. wide, producing 5 cwts. of lead per fm. The lode in the 40 end west is 18 in. wide, chiefly of spar, and poor; the lode in the winze, sinking under this level, is wide, and producing 1½ tons of lead per fathom. The lode in the 30 end west is 4½ ft. wide, yielding ¼ a ton of lead per fm. The lode in the 20 end west is 3 ft. wide, producing fine stones of lead, and likely to do better; the same will apply to the character of the lode in Keith's shaft. Our tributers generally are working with great spirit, and appear to be doing fair wages. We are looking out for a vessel, to ship our lead in the early part of the coming week, computed 35 tons.—Dec. 11.——The 50 fm. level has been driven 5 fms. west of the engine-shaft, in which end the lode is upwards of 4 ft. wide, producing about 5 cwts. of lead per fm. The 40 fm. level end has been driven west of the said shaft 33 fms.; in this end the lode is not large, nor can I say it is rich, though there are indications of an improvement; and, from the run of lead ground gone down in the bottom of the level above, we may expect to do good by driving this end; the lode in the winze, sinking under this level, is large, and produces about 1½ ton of lead per fm.; three pitches are at work in the back of this level—viz.: one at 5*l.*, one at 3*l.* 10*s.*, and one at 3*l.* 5*s.* per ton. The 30 fm. level is driven 53 fms. west of the shaft in this end; the lode is 4½ ft. wide, with a very considerable improvement of lead to-day, producing now not less than 2 tons of lead per fm.; we have two pitches working in the back of this level—one at 4*l.*, and the other at 3*l.* 15*s.*; also, three pitches in the bottom—two at 3*l.*, and one at 3*l.* 15*s.* per ton. The 20 fm. level is driven 60 fms. west of shaft; the lode in this end is 4 ft. wide, producing some fine stones of lead; we have a similar lode in the bottom of Keith's shaft, which we expect to hole to the said end in the course of a very few days. A rise has been holed from the 30 to the 20 fm. level, about 16 fms. behind the 20 end, which has opened tribute ground. Having altered the principle of working the mine, from that of tutwork to tribute, we are of opinion that we shall be able to greatly economise the cost. For the past month, we have raised about 35 tons of lead ore. This reduction is more attributable to the falling off of lead in the ends; but as these are greatly improved the last day or two, coupled with the lay of ground further west, before these ends, I think we may safely expect to do greater good by forcing these ends in that direction.—Dec. 13.

LEWIS.—The lode, in the engine-shaft, sinking below the 60 fm. level, is 2½ feet wide, worth 5*l.* per fm., and very promising. The 60 east and west, on the south branch, is suspended, in order to put the men to rise in the back of the same level against the winze, sinking below the 50 fm. level, for a better ventilation; the lode in the rise, in the back of the 60, is 1 ft. wide, worth 12*l.* per fm. The lode in the 50 east, on the south branch, is 1 ft. wide, worth 8*l.* per fm., and very kindly; the lode in the winze, sinking below the 50 fm. level, on the south branch, is 6 in. wide, with floors of tin on each side, making it worth 16*l.* per fm.; all the other places on the same are as when last reported.—Dec. 11.

MENDIP HILLS.—The lode in the 38 fm. level, north of Stainsby's shaft, continues very large—how large I cannot inform you, as we are extending the end on the foot wall part, which is composed of spar and flookan—more favourable for driving; in the south end, in the same level, the lode is at present about 2 ft. wide, consisting of quartz, iron, and a little flookan, with spots of lead in places; we have not yet intersected any other lodes in this part, which I attribute to their not underlaying as fast as was expected, from the appearance at surface. In the slag department, during the past week, several men have been engaged in laying open the trench across the upper part of the valley, where we have a bed of slags; from its appearance, I believe it to be a very large one. On Saturday last, a small trial pit was sunk through it, where I am glad to say we find it 8½ ft. thick—good work. The masons have completed the furnaces, and are now engaged arching over the flues, deposit chambers, &c. The tram-road is also being laid down with all possible dispatch.

SOUTH WHEAL TRELAWNEY.—Snell's engine-shaft is in course of sinking, with nine men, in the 20 fm. under adit, the ground in which is still favourable, and water just as it has been for some time.—Dec. 13.

TRELEIGH CONSOLS.—Christoe's shaft, below the 110 fm. level, sinking in the country. In the 110, east of ditto, lode 20 in. wide, more promising, with good stones of ore. In Garden's shaft, below the 100, we have the south part of the lode, 2 ft. wide, with stones of ore. In the 100, west of ditto, we are driving south through the lode and elvans, with stones of ore, very hard; are driving south through the lode and elvans, with stones of ore, very hard; the 100, east of ditto, is holed to the winze in the bottom of the 90, and we shall commence the 100 end on Monday. In the 90, west of ditto, the lode is 2 ft. 20 in. wide, producing stones of ore. In the 80, west of ditto, the lode is 2 ft. wide, more promising, with good stones of ore. In the 70, west of ditto, the lode is 1 ft. wide, orey, not to value. We shall rise on Monday against the 60 winze below the 60 west; the lode is 2 ft. wide, producing a small quantity of ore, not to value. Wheal Parent engine-shaft is sinking in the country; and the adit cross-cut north, driving against the engine-shaft. At Lockett's shaft, below the 10 fm. level, the lode is 2 ft. wide, producing good stones of ore, not to value. The whim-shaft, below the adit, on Wheal Parent, is suspended, the water being very quick. We are preparing the ores for sampling, and shall have about 150 tons.—Dec. 11.

WEST WHEAL JEWEL.—No lode taken down in either of the levels on Wheal Jewel lode in the past week. We have cut the south lode in the 42 fm. level, and have commenced driving east on it; the lode is 1 ft. wide, producing stones of ore, with a very promising appearance. In the 30 fm. level, west of Quarry shaft, on Tolcarne tin lode, the lode is 18 in. wide, with stones of tin in it. In the 20 fm. level, west of Quarry shaft, on the same lode, the lode is 15 in. wide, worth 10*l.* per fm.; in the adit end, west of Quarry shaft, on the same lode, the lode is 18 in. wide, worth 7*l.* per fm.; in the shallow adit end, west of Quarry shaft, on the same lode, the lode is 1 ft. wide, unproductive; in the stopes, in the bottom of the adit, east of Pryor's winze, the lode is 5 ft. wide, worth 40*l.* per fm.; in the stopes, west of Pryor's winze, the lode is 5 ft. wide, worth 30*l.* per fm.—Dec. 13.

WEST WHEAL MARIA.—The eastern engine is down below the 38 fm. level 3 fms.; the lode in which is about 3½ ft. wide, composed of capel, spar, mundic, and good stones of ore—ground favourable for sinking. The cross-cut south, in the 54 fm. level, is rather hard for driving. Our engine and pit-work in good order.—Dec. 14.

WHEAL ADAMS.—The shaft men have been engaged in the past week in extending a level south on the eastern lode, in order to reach the point where the winze has been sunk, below the 40 fm. level, to communicate with the rise, above the 50 fm. level, which we expect will be holed in a week from this time; in extending this level, the eastern lode has been worth 11*l.* per fm.; but, in the present end, the lode is poor, being mastered by the western or sparry part of the jack lode, which is approaching the end; that part of the lode last mentioned, now seen, is worth 9*l.* per fm. It is evident that the lodes are approaching each other in this direction; the lead is, consequently, increasing, and the blende decreasing—in fact, the latter mineral has almost disappeared. When the above object is accomplished, there will be a good piece of orey ground laid open; we have set a pitch, in this level, on the western lode, at 8s. in the 1*l.* on the value of the lead, which we expect will lay open ground of importance in the ensuing month; we have also seven tribute pitches above this level that are wrought at a tribute, varying from 12s. to 9s. in the 1*l.* on the value of the lead—all of which are producing a fair quantity of mineral. Some quantities of both brown and blue blende have been raised during the past month; and the ground is now being laid open to raise considerable quantities during the next three months. About 50 tons of gossan have been raised from the middle lode, in the 18 fathom level, and the men engaged thereon have now been taken on tribute on the lead discovered; they have also discovered some copper ore ground, which will not be lost sight of. Lead is now being raised as fast as the dresser can possibly prepare it for market, and everything is being done to facilitate this most important object. We shall sample 80 tons of silver-lead ores in a fortnight from the present time—samples of which will be sent to the different companies who purchase that article immediately after.—Dec. 11.

WHEAL CURTIS.—Yesterday, in driving the 30 fm. level, west of Crase's shaft, we cut a course of ore, about 76 fms. west of the shaft; the orey part of the lode is 1 ft. 2 in. wide, producing copper ore, worth about 9*l.* per ton. Judging from present appearances, the lode is worth about 16*l.* per fm., increasing in size as we proceed. The tributers' pitches, in the back of this level, are improving. I purpose to write more fully, when we reach beyond the veins, or droppers, that are forming with the lode on the south side. We have holed Evans's shaft to adit, and will, in a few days, be able to sink on the course of the lode, from which place we shall also raise copper ore.—Dec. 10.

WHEAL TRELAWNEY.—The ground in Phillips' shaft is much better for sinking than it has been. The lode in the 52 fm. level south is worth 10*l.* per fm., and ground easy for driving; this level, north, is similar to my last report; the stopes in back of this level are still looking very well. The 42 end south is driven to Wheal Mary Ann boundary; in this level, north, we are rising near the end against the winze sinking under the 32, where the lode is worth 12*l.* per fm; I expect this winze will be holed in a day or two; the stopes in back of this level are a little improved. The lode in the 32 end, north, is worth 6*l.* per fm.—the ground is rather hard; in the winze, sinking under this level, the lode is worth 10*l.* per fm.; the stopes in back are similar to last report. In Trelawney shaft, sinking under the 42, the 42 cross-cut west, and the 22 fm. level cross-cut east, I cannot speak of any material change.—Dec. 14.

WHEAL TRESCOLL.—We have this week cut a very rich lode of tin, only 12 ft. from surface, a sample of which is sent to the office in London; it will produce 1500 lbs. to the 100 sacks of work; it is from the E lode, which was always thought a very poor one, but which turns out so very rich.

FOREIGN MINES.

BOLANOS MINES.—The following information from this company's mines, was, unfortunately, omitted in our last Journal:—

El Bote Mine, *Oct.* 20.—Since my last communication to you, dated Sept. 17, I beg to inform you, that the sinking of the San Genaro shaft goes on satisfactorily; and I hope to be able, at the end of the month, to get the shaft to the proper depth, to commence the cross-cut of communication with Guadalupe level, there being to date about three varas remaining to be sunk to complete the above object. The cross-cut of San Jose, also, progresses tolerably well, the average driving being about two varas per week. In the cross-cut, De la Compania, but little has been done, as regards the driving—a part of the month being taken up in cutting a cacucha, and also in squaring the bottom of the cross-cut; however, since we have begun working regularly, the driving, during the last three weeks, averages about two varas per week. In Guadalupe east, no improvement in the vein has taken place, it still being disordered and poor, which, perhaps, is in consequence of the vein having been thrown, or twisted, several degrees to the north of its former course. Owing to the failure in this level, a cross-cut south has been commenced, in order to ascertain whether there is still a portion of the vein remaining in that direction, or not; but, as yet, no discovery has been made. In the Pozo de Guia, the level south, towards Providencia, continues in good ore. We have also a very good course of ore going east from this pozo, in which a level has just been commenced. In the workings in the bottom of Guadalupe east, the vein continues good, but as the water has considerably increased in all our workings below Guadalupe level, as well as in San Fernando shaft, but little time has been allowed us for the extraction of ore, the malacates being principally employed in keeping the water; consequently, our cargo has most considerably fallen off. The vein in the rise in the back of Frente Alta of San Antonio, continues good. The cross-cut of Esperanza, and also the adit of Valenciana remains much the same as reported in my last.

Ores raised in September (four weeks), 8451 cargas; profit, ditto, $10,570.

Oct. 22.—The extraction of ores, since I last wrote to you, has weekly become more reduced, on account of being obliged almost always to keep the four whims at the drainage of the San Fernando shaft. In the cross-cut of the Campania, considerable streams of water have been cut; and this, added to what the pumps extract from our labores, have kept the whims fully employed: and, at times, it has been so strong, that it was feared we should have to stop the extraction of ores from the Pozo de Guia, and the planes opened to the east; the extraction has, therefore, been reduced to these points; and, I am happy to say, in the eastern planes, an improvement is observed in the ores as they get deeper. A few paradas are working in the Frente Alta of San Antonio, and giving good ores. In the Compania cross-cut, the ground now seems more favourable for driving, and I hope good progress will be made, if we are not detained by cutting more water, which I do not think will be the case, until the end meets the vein.

Merionethshire Slate Company.—We are very much gratified to learn, that the labours on which the new directors of this company have entered, have given general satisfaction to the shareholders—inasmuch, that a large number of the shares allotted at the commencement, which were not then paid upon, have been readily responded to, in compliance with the advertisements, which appear in our two last Numbers. This co-operation with the directors in carrying out the efficient plans proposed by them, will, we learn, prove highly remunerative to the shareholders—the quarry now being worked to a profit of 18 per cent. on the limited capital already subscribed, and will be considerably increased by the employment of additional labour, which the vast demand for the produce ensures, and the inadequacy of the supply before.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

East Crowndale.—It will be observed, by the mining captain's report, that considerable improvement has taken place in the 47 fm. level, north copper lode, since which further accounts have been received, by which it appears that the leader above-mentioned has increased from 7 to 10 in. wide, nearly solid. There is, also, some very good accounts of the Rix Hill tin lodes, which are of a most encouraging description.

Herodsfoot.—There is a great improvement in the 82 fm. level south; the lode is estimated worth from 25*l.* to 30*l.* per fm. It is gratifying to learn, that the clergy and gentry in the locality of Herodsfoot and Herodscombe Mines are adopting means for the erection of a chapel of ease and school-rooms, for the religious benefit of the miners, and the education of their children. This laudable object reflects the highest credit upon the philanthropy of those benevolent gentlemen who have interested themselves in the matter. A grant of the site has been given by Sir T. B. Lethbridge and Sir W. L. S. Trelawney, and an endowment of 50*l.* per annum by Ballial College, 10*l.* per annum by Sir T. B. Lethbridge, and 19*l.* per annum by the patron and rector of Lanreath—whilst the subscriptions amount to upwards of 700*l.*, including the munificent donation of 400*l.* from the Rev. R. Scott, rector of Duloe. The great distance of the parish church from the mines, precludes any regular attendance of the miners and their children at a place of worship—whilst the means that are thus contemplated will afford opportunities of spiritual and moral instruction to this class of the community, whose secluded residences too frequently exclude the advantages of religious or moral nurture. We trust this important step towards the emollition of human labour, and the enlightenment of the mind, will be readily responded to by the adventurers, both individually and collectively, in aid of funds now in course of subscription for this praiseworthy and laudable undertaking.

Plymouth Wheal Yeoland.—There is as fine a course of ore (tin) in the lode, 50 fms. to the south of the south lode, as can be seen—quite equal to anything that they had in that lode.

Wheal Ash is represented to have considerably improved in the general appearance of the lode; indeed, the opinion of practical men is, that a course of ore will be met with before the month expires.

The Oak Farm Works.—There is no prospect at present of the blast-furnaces at these works being again put in operation—the consequence of which is, that considerable distress will be experienced by the workmen thrown out of employment; also by the tradesmen and shopkeepers in the neighbourhood. The proprietors of the Galvanised Iron Company, are about to blow out a portion of their blast-furnaces, a measure rendered imperative by the depressed state of trade.—*Birmingham Advertiser.*

THE AUSTRALIAN MINING COMPANY.

An extraordinary general meeting of shareholders was held at the offices, Adelaide-place, London-bridge, on Monday, the 13th inst., to receive the directors' report on the present condition of the company; and to fill up the vacancies occasioned in the direction by the resignation of Sir Hyde Parker, Bart., and the decease of Samuel James Capper, Esq.

John Masterman, Jun., Esq., in the chair.

Mr. Hodgkinson read the following report of the directors:—

Your directors feel it to be their first but painful duty to announce to you, the great loss which the company have sustained, by the death of their late chairman, Samuel J. Capper, Esq., whose remarkable talents and perseverance, during the formation of the company, secured to him the confidence of the shareholders in an eminent degree. In accordance with the intimation made by your directors, at the second annual general meeting, held on the 26th July last, that they would, on receipt of important advices from the colony, call a special general meeting of the shareholders, they have now the pleasure to inform you, that they have received letters from the committee of management in Adelaide to the 9th June last, announcing the following favourable intelligence:—

Copy of Letters and Report.

I am directed by Mr. Montefiore, in the absence of our chairman, to forward to you, by the *Theresa*, the annexed copy of Mr. Anstey's report, which is highly encouraging, and I trust will be followed, in about six weeks, with information that the cross-course has cut the lode in the 30 fm. level; we shall then obviously have a good range of ore to break down, and economical means of bringing it to grass.—R. Bonnow, Secretary.

To the Chairman of the Local Committee of the Australian Mining Company.

Highercombe, June 6, 1847.—Sir,—I have to report my visit to Tungkillo. I am happy to say that the appearances of improvement are very flattering, as, in addition to the fine copper lode reported by Mr. Solly, an excellent lode has been cut in the 20 fm. level, running north, which is 10 fms. above the copper in the shaft reported before. The appearances in Anstey's lode are also improving, and consequently Captain Dennis is in very high spirits. All the various setts were let without difficulty at reasonable prices, and I have much reason to be satisfied with my inspecting visit. I shall bring you some fine specimens on Tuesday next, of the recent discoveries.—G. A. Anstey.

The directors regret that no late report of the workings at Wheal Rothschild has reached them. The shareholders were informed, at the annual general meeting, that the Government had been requested to grant powers for facilitating the transfer of the 2000 shares sent to the colony, as, under the Joint-Stock Company's Act, serious difficulties existed in that respect, and thus deprived those shares of the character of a marketable commodity. Your directors have been unceasing in their endeavours to have this power granted, considering that a more general distribution of the shares in the colony could not but tend to the advantage of the company; and they have no doubt their application will be successful, so soon as the formalities of office shall have been gone through. In the meantime, however, the board have, with deep regret, to inform the shareholders, that the committee in Adelaide have advised, that in consequence of the difficulty thus alluded to, they have, per *Phœbe*, returned those shares, and the directors lay before you the views of the local committee on that determination:—

Adelaide, May 11, 1847.—I am directed to advise you, that in pursuance to the resolution of the committee of this day, they have drawn upon the directors in London, at 60 days' sight, for 4000*l.* in favour of the Bank of Australasia; and I am at the same time to inform you, they would not have drawn upon the directors if the 2000 shares had been transferable, and hence saleable in the colony; but as the deed stands, the committee have no chance now or hereafter of availing of funds from this source in the colony (see our solicitor's opinion). They have, therefore, requested Mr. M'Dermott to transmit the the certificates for the shares again back to you; and upon the further disposition of them, the members of committee, to whom the shares were allotted, will address you themselves, with a view of taking up the shares in London.—R. Borrow.

With reference to this subject, Mr. De Castro was requested to communicate with Mr. Jacob Montefiore, whom he understood had been appointed as attorney to Messrs. Anstey, Baker, Hagen, and Hart, for the arrangement of those shares; and that gentleman's reply was to the following effect:—

Moorgate-street, Oct. 18, 1847.—Dear Sir,—I am in receipt of your communication of the 11th inst., handing me a resolution of the directors of the Australian Mining Company, with respect to 2000 shares transmitted by the committee of management at Adelaide. The following is a copy of the letter I have received from three of those gentlemen—viz.: We beg to inform you that we have forwarded, by the *Phœbe*, a power of attorney, authorising you to dispose of certain shares allotted to us in the Australian Mining Company. The circumstances under which we took this step are as follows:—We applied to the directors of the company for the 2000 shares reserved for the colony, and our application was favourably considered. The certificates arrived here about two weeks since, and, much to our disappointment, we find that there is no possible mode of transfer out of England. We are thus deprived of a handsome profit, which we might at once have realised on the sale of the shares, and have no alternative but to request that they may be returned to London.

We imagine that you will have no difficulty in disposing of them there, at nearly, if not quite, as good a profit as we might have made here. We are desirous not to trammel you with stringent instructions, but to leave the whole matter in your hands, merely requesting that they may be sold on our account to the best advantage. You will, of course, put yourself in communication with the board of directors on the subject, and obtain as good terms as you can regarding the mode of taking the shares up. You will observe that we have signed the Deed of Covenant, binding ourselves to all the terms of the Deed of Settlement.—John Baker, George A. Anstey, John Hart.

You must be aware, my dear Sir, my inability to carry out the instructions of these gentlemen under the present existing circumstances, and I have no funds of these gentlemen in hand; indeed, their authorisation to me is merely for the purpose of disposing of the shares, which I am not able to effect. Jacob Montefiore.

To H. De Castro, Esq.

Upon the arrival of the *Phœbe*, the board having received, through the medium of the Bank of Australasia, the 2000 shares, applied formally to Mr. Montefiore for the payment of the deposit, to which the following reply has been received:—

To Mr. Hodgkinson, Secretary to the Australian Mining Company.

London, Dec. 1.—Sir,—I have to acknowledge the receipt of your letter of this day; and, in reply thereto, I have to state, that I have received a letter from Messrs. Baker, Anstey, and Hart, dated Adelaide, 17th May, wherein those gentlemen request I will apply to the directors of the Australian Mining Company, for 2000 shares, belonging to them, and dispose of the same in such manner as I may deem most advisable for their interest. Now, Sir, in the present state of the market for these shares, I find I am unable to carry out their wishes—consequently my power ceases, for I have no instructions from them to pay for the shares, and retain them on their account; nor do I surmise such could have been their intention, as they have not provided me with any funds for that purpose. Jacob Montefiore.

This draft of the committee of management for the sum of 4000*l.* sterling, in addition to 1000*l.*, for which a credit had been given them, entirely frustrates the expectation the directors were led to entertain, that they were not likely to be again drawn upon until the drafts were accompanied by bills of lading of a shipment of ore; and renders it necessary to make a call of 10s. per share, which will become payable on or before the 15th January next.

The local committee, at the same time that they determined upon drawing for this large amount, passed the following resolution:—"That with the advice of the draft for 4000*l.*, the directors be informed, that the committee intend not to negociate any further drafts on them, until they are in a position to accompany it with bills of lading for ore; the present amount of money in hand being sufficient, in their opinion, to carry on the affairs of the company, until a shipment of ore is made."

The advice of the draft for 4000*l.* was also accompanied with the following intimation with reference to the supply of tonnage engaged, that if the first vessel arrived there in August—"They would exert themselves to find cargo for her, in the way most advantageous to the company; and they trust she will load entirely with our company's ores."

Your directors have to express their great regret at the apparent scarcity of practical mining information they are enabled to lay before you. The shareholders will recollect, that the directors, with a view to remedy this evil, anticipated the desire from the local committee, by sending out a mining captain; and they hope, very early in the spring, to receive from him full and satisfactory statements of the progress of the company's operations, when the efficient force sent in May last, by the *Rajah*, under Capt. Alfred Phillips's superintendence, shall have been placed a short time on the works.

Looking at the nature and extent of the company's present and probable future operations, your directors consider it is highly desirable to send to the colony a gentleman fully qualified to act as resident superintendent at the mines; and, as the duties required will be of a varied and most responsible nature, your directors are endeavouring to obtain a person whose character and abilities will fully justify the important trust to be reposed in him.

Your directors beg to add, that they have repeatedly, in their letters, impressed on the minds of the committee of management in Adelaide, and also personally to Mr. Montefiore and Mr. Hagen, when in London, the urgent necessity of the utmost possible economy, consistently with efficiency in the operations; and it is their determination to practice the same system in the expenses at home.

Due notice has been given for filling up the two vacancies in the direction of the company; and the following gentlemen, duly qualified, have offered themselves accordingly—John Capper, Charles Downs, George Edmund Hodgkinson, Jacob Montefiore, James Parker Penny, and Henry Rendell Wotton, Esquires.

The Chairman said, that, since the report was drawn up, another letter had arrived from Mr. Borrow; but it gave no information of the cross-course having cut the lode in the 30 fm. level—yet it held out that expectation. He informed the meeting, that he occupied the chair only temporarily, as it would be for the whole of the directors to elect a chairman from their body, in place of the gentleman who was lately deceased. The nature of the report would, no doubt, cause in their minds considerable disappointment, which was equally participated in by the directors. (Hear, hear.) He regretted the conduct pursued by the committee of management, in sending over for sale in this country 2000 shares, which they had agreed to take up—which had necessitated the call now made on the shareholders. It would be for the meeting to say, if they ought to enforce the contract on the part of these gentlemen, or if it would be better to forfeit the shares. He considered that, although they had been greatly inconvenienced by this conduct on their part, and the shares had been depreciated in the market, yet the prospects of the company were not diminished—in proof of which he had only to refer to the correspondence in the report. They had, also, this to consider, that, apart from mining speculations, they possessed 20,000 acres of land for their money, which was well suited for agricultural purposes. The chairman then drew the attention of the meeting to the question of appointing a superintendent in the colony; and whether the functions of the committee would not be discharged with more advantage to the company by such a gentleman, than by the committee of management, who received no remuneration, and who had their own private affairs to attend to? (Hear.) From the retirement of Sir Hyde Parker, and the decease of Samuel James Capper, Esq., two vacancies had occurred in the direction, which had now to be filled up. They would perceive that several candidates had come forward; and the election would, therefore, be quite in the hands of the proprietors.

Mr. Penny asked several questions as to the general position of the company.—The Chairman read a statement, which he said was prepared up to the 30th of November, showing the total receipts of the company to be 39,895*l.* The expenditure was also detailed, and left a balance of 870*l.* in this country, and 3127*l.*, on account of the committee, in the colony—which would be sufficient for carrying on the operations until shipments of ore might be expected.

A Proprietor asked how many directors there were at present?—The Chairman replied, seven.

A Proprietor questioned whether any more were necessary in the present depressed state of the company?—The Chairman said, that no salaries were attached to the office—they would depend upon the payment of dividends to the shareholders. (Hear, hear.)

Mr. Halcomb read several letters, which held out the most gloomy predictions as to the result of the operations of the company, signifying that the mere *indications* spoken of were all that was obtained, and that no lode had been discovered.

A Proprietor asked, if there was any objection to give the names of the writers of those letters?—such statements being so contrary to the expectations of the shareholders. (Hear, hear.)—Mr. Halcomb declined to give the names of the writers.

The Chairman cautioned the meeting not to be misled by any anonymous reports. If the writer, or Mr. Halcomb, would communicate with the directors, and state any facts that came within their knowledge, they would receive every attention.

Mr. Hancock thought a committee of inquiry into the state of the company's affairs would be agreeable to many of the shareholders.—The Chairman said, the directors would be happy to associate themselves with any of the proprietors, and to receive their suggestions as to the future management of the company. (Hear, hear.)

Mr. Hancock meant no reflection on the directors.

Mr. Cash could not see the good of any committee. It would only be taking the responsibility off the directors, when matters of grave importance were to be considered. There were seven of them, and two more now to be elected. Looking at their great respectability, he thought matters had better be left in their hands. (Hear, hear.)

Mr. Horne (a director) thought some inconvenience might arise from a committee, who would have to report to another meeting. If any shareholders thought proper to meet the directors on the next board-day, and offer their suggestions, he knew they would be thankfully received, and acted upon where advisable. (Hear.)

After some discussion as to the conduct of the committee in the colony, and other matters, Mr. Hancock withdrew his proposal for a committee; and the report of the directors was adopted unanimously. It was understood, however, that those shareholders who felt themselves in possession of any information or facts that would guide the directors in their deliberations, should attend at the office on the next Monday, when any statements they might make would be received in confidence.

The election of two directors was then gone into, when the successful candidates were announced to be John Capper, and G. E. Hodgkinson, Esqs.; and a vote of thanks having been passed to the chairman the business terminated.

COOMBE VALLEY SLATE COMPANY.

At an adjourned special meeting, held at the offices of the company, Whitefriars-street, on Thursday, December 9—present, Mr. H. Doubleday, Mr. Batt, Mr. Malcholm, Mr. Matthews, Mr. Beard, and Mr. C. S. Richardson represented by letter Mr. Spinks, Mr. Heathcock, Mr. Sargeant, and Mr. Kiuk.

Mr. Beard in the chair.

Proposed by Mr. Doubleday, seconded by Mr. Batt—That a call of 10s. per share be made, to form the necessary funds to meet the expenses, &c., of the purchase of the lease of Crackington Harbour, and the Allshard Quarries.

Proposed by Mr. Malcholm, seconded by Mr. Doubleday—That the trustees pay, as a deposit towards the Crackington lease, such sum of money as they may conveniently spare from the bank stock, after the present monthly cost is disbursed.

Proposed by Mr. Doubleday, seconded by Mr. Batt—That bills and labour cost be paid this month, to the amount of 82*l.* 9s. 8d.

The following is an abstract of the report presented by Mr. C. S. Richardson, the secretary:—

On visiting the quarry this last month, I found the late storm had done much damage, and that great expense had been incurred to replace the works destroyed. The slate that had been made was of a very good quality, considering the depth, but there was not sufficient in quantity to meet the outgoing cost; I, therefore, considered it prudent to at once discharge many of the men, and only keep on such as may be absolutely necessary to attend on the pitmen, and to assist in building the cottages. I will now beg to draw your attention to the importance of immediately settling with the owners of Crackington Harbour, and Allshard Quarries, to obtain which will require 280*l.*—viz.: for the premium on the transfer of the Crackington lease 250*l.*, the unexpired term being 20 years; Allshard lease 10*l.*, law expenses about 20*l.*; we shall then command nearly three miles of sea coast, and one of the finest harbours in the Bristol Channel, with such immense cliffs of fine blue slate, that will keep employed 500 men for the next 200 years, and this too without any royalty, at a rent of only 40*l.* per annum. I propose first to complete the cliff road round to the shipping place, so that waggons may come from our quarries to deposit our produce for exportation, and country conveyances be enabled to take away any merchandise brought in by trading vessels. There is a great demand for coals, limestone, iron, and timber, and which is now only waiting our preparing a safe mooring. In the formation of this road about 320*l.* has been expended by the late proprietor, and a month's work, say 50*l.*, will finish it; we shall then erect some simple machinery that is at our other quarry, and by means of a gear chain be able to load or unload a vessel in five hours; at the wharf there is an excellent limekiln, constructed at a cost of above 200*l.*, which I propose to let to any of the neighbouring farmers, reserving a right to use ourselves when we may require it. The 11 acres of land belonging to the harbour we may also let, keeping only such portions as we may require for wharfs, warehouses, and other erections; as soon as we get possession, I shall set men on tribute to make slate at any spot near Allshard most convenient, which they will do, without any cost for machinery, at 10s. in the 1*l.* I next propose to clear off certain pieces of head, and open a quarry 200 ft. long by 100 ft. wide, construct some new poppet heads and gear in a substantial manner, erect a horse whim, and employ 100 hands—the whole of which to be done by contract; I think with this number we may easily make 50 tons per week of various descriptions, the cost of which will be 65*l.*; its value at the harbour on board the ship is 110*l.* To execute the whole of this will involve a call on the company of 1*l.* 10s. per share, we may then congratulate ourselves in having the very finest blue slate quarries in the county, and the best harbour on the coast. J. Spinks, Esq., of Melbury Park, Dorchester, Dorset; Thomas Heathcock, Esq., Sidmouth, Devon; and Samuel B. Sargeant, Esq., Callington, Cornwall, have minutely examined the whole property, and their opinion is unanimous—viz: that the prospects of the company are most encouraging, and that no time ought to be delayed in bringing those works into immediate operation. A specimen of our slate is now on its road to London, which will be found almost equal to the very best Welsh quarries. About March we can get plenty of vessels to come in and freight for London, and in that time I hope to have 300 tons ready for market. We can exact dues from any vessels that load or unload on our piers, and any small warehouses we may build will readily let for the deposit of coal and lime; one of our shareholders has, I believe, decided on taking up his residence at the new port, and commencing business as a general merchant—he will be found of infinite service to the company, being a persevering and thorough practical man of business; thus, from small beginnings, great events may flow; and the Coombe Valley Company, with its little capital of only 5000*l.*, will have the honour of laying the foundation-stone of a superstructure that will reflect its blessings upon thousands, and amply remunerate the energetic enterprise of its members. We have received at the office a very ably-written letter from W. D. King, Esq., of Sudbury, wherein that gentleman asks—"Could we as soon as we formed a trade obtain possession of the freehold of Crackington, so as to make our investment a permanent one?" I am not in a position to give a positive answer to this question, but I am informed by Col. Fortescue, of Stratton, that there is a provision in the will of the late Lord Rolls, showing, that whenever a company should carry out the Crackington Harbour, the manor of Crackington shall be ceded to them for a specified sum. The late harbour company, who obtained an Act at a cost of 13,000*l.*, was to have all the harbour lands for 3000*l.*; but whether the demise of Lord Rolls made void this agreement at that sum I cannot say, but before we hold our next meeting I will endeavour to ascertain this point.

In conclusion, I beg to remark, that had any Welsh quarry proprietors possession of such valuable quarries as ours, with its appendages, they would have valued a lease of it at 20,000*l.* premium. Should any doubt be entertained of this assertion, I can prove its reality by naming the quarries, and their relative values. Our shares are now at a considerable premium in the market, and there are yet a few in the hands of the company; but as any shareholder is, by the provisions of the cost-book, entitled to take them at par, I hope the remainder will shortly be taken up, which will enable us to carry out all the works now projected, and leave a floating capital in hand.

GENERAL MINING COMPANY FOR IRELAND.

We gave a few particulars, in our last, of the fourth half-yearly meeting of this company, and now append the report of the directors presented thereat:—

"The progress made in the company's works for the last half-year, as exhibited on the balance-sheet ending the 6th October, 1847, and transmitted to the proprietors, is considered by your board satisfactory. Your directors have much pleasure to report, that since they last met the shareholders, they have succeeded in reducing the royalty hitherto payable on East Shallee, one-half, which leaves them now at liberty to work the mine with more effect. It is gratifying to observe, in a report made by one of the directors, just returned from inspection, that their mining operations in the county Tipperary give general satisfaction; and that not a single outrage of any kind has been committed against their persons or property. The arrangement of giving meal, as weekly subsist to the miners, is found to be most beneficial. The distribution has now reached three tons per week, and is supplied to them and their families at first cost cash price. The numbers dependent on the company's works in this county, amount to 1014 persons. East and West Shallee are yielding fair returns, and only required to be fully worked to prove their value. It is expected to ship from these mines monthly 40 tons of silver-lead ore. Hereafter, when other arrangements now in progress are complete, the quantity, it is hoped, will be considerably increased. Letkamore Copper Mine, with its extensive machinery, is not at present more than paying cost; but we are now in a position to make such further trials, as, it is hoped, will afford more promising results. Your directors pledge themselves to continue to carry out the trust confided to them by the proprietary, to the utmost of their ability, and to work only such mines as give reasonable evidence of being remunerative. In conclusion, your directors have to observe, that although the assets as now exhibited might, at first, seem to warrant the payment of a dividend, your directors are of opinion, that they best consult the interests of the proprietary by deferring this desirable measure till a later period, when it can be done, as it should be, irrespective of risk or inconvenience."

STRAY PARK AND CAMBORNE VEAN MINE.

At a general meeting of adventurers, held at the mine, on Friday, the 10th inst., the accounts for Sept. and October were examined and allowed, showing balance in favour of the adventurers of 557*l.* 8s. 8d.:—

To tutwork cost in September and October	£975	6	10
Merchants' bills in ditto ditto	333	6	2
Tribute pay on ores sold 7th Oct., 216*l.* 17s. 2d.; subsist advanced on the above ores, 385*l.* 2s. 4d.; lords' dues payable on ditto, 89*l.* 10s. 10d.	691	10	4
Compensation paid Charles Reynolds, Esq.	500	0	0
Balance	557	8	8
Total	£3097	12	0
By copper ores, sold 7th October, 534 tons 16 cwts. 2 qrs.	£2189	2	5
Balance in hand	908	9	7
Total	£3057	12	0
Nov. 1—Balance in hand	£557	8	8
Dec. 2—Copper ores, 421 tons	1813	0	0

Average monthly getting of miners:—Tutworkmen, 2*l.* 12s. 6d.; Tributers, 2*l.* 4s. 6d.

The following report from the agents was then submitted:—

Stray Park Mine, Dec. 10.—In the rise above the 60 fm. level, by four men, at 9*l.* per fm., the lode is 18 in. wide, yielding 2 tons of ore per fathom. In the 60 end, driving west, by four men, at 7*l.* 10s. per fm., the lode is small, containing stones of ore. In the 70 end, driving west, by four men, at 7*l.* 10s. per fm., the lode is small, containing stones of ore. In the 80 end, driving west, by four men, at 7*l.* 10s. per fm., the lode is 18 in. wide, yielding 2 tons of ore per fathom. In the 90 end, driving west, by four men, at 9*l.* per fm., the lode is 3 ft. wide, yielding 5 tons of ore per fathom. In the winze, sinking below the 90, by four men, at 9*l.* per fm., the lode is 3 feet wide, yielding 5 tons of ore per fathom. In the eastern winze, below the 90, by four men, at 8*l.* per fm., the lode is 15 in. wide, yielding 2 tons of ore per fathom. In the 100 end, driving west, by four men, at 11*l.* per fm., the lode is 3 feet wide, orey throughout. In the winze, sinking below the 100, by four men, at 13*l.* per fm., the lode is 3 feet wide, yielding 2 tons of ore per fathom. In the 110 end, driving west, by four men, at 10*l.* 10s. per fm., the lode is 3 feet wide, yielding 4 tons of ore per fathom. In the 120 end, driving west, by four men, at 12*l.* per fm., the lode is 3 feet wide, yielding 3 tons of ore per fathom. In the 130 end, driving west, by four men, at 8*l.* per fm., the lode is 14 in. wide, yielding 1 ton of ore per fathom. In the 150 end, driving west, by four men, at 8*l.* 10s. per fathom, the lode is 2½ feet wide, yielding 3 tons of ore per fm. In the cross-cut, driving south of Camborne Vean engine-shaft, by four men, in the 150 fm. level, the ground is favourable—price 6*l.* per fm. In the 180 end, driving east, by four men, at 12*l.* per fm., the lode is 1 foot wide, yielding 1 ton of ore per fathom; in the 180 end, driving west, by four men, at 12*l.* per fm., the lode is 2½ feet wide, yielding 3 tons of ore per fathom. In the cross-cut, south of machine shaft, in Stray Park, clearing by four men, we have not yet got to the end, but have cleared 12 fathoms south of the last lode discovered. In Wheal Frances cross-cut, driving south, in the 56 fm. level, by four men, at 3*l.* per fathom, we have about 26 fathoms further to drive before we shall cut the south lode. In the 56 fm. level, 17 fms. north of Wh. Frances shaft, there is a level, supposed to be driven on Stray Park main lode 50 fathoms in Wheal Frances sett; and, on examining this level, we find that the main lode is standing untouched to the north. There are four men now employed cutting through the lode, of which we can already see two feet in width, containing good stones of ore. Our samplings have lately fallen off in quantity and quality; but this is to be attributed more to the depression in the copper market in Cornwall, than to any falling off in the prospects of the mine. The general quality of the ore now breaking in the tutwork ends will average about 5*l.* per ton at the present standard of copper.—R. Eustice; E. Ralph.

HARROWBARROW OLD MINE.

At an adjourned meeting of adventurers, held at the Globe Hotel, Plymouth, on Thursday, the 9th inst. (being a continuation of the meeting held on the 2d)—Edward Prior, Esq., in the chair—the following resolutions were passed:—That Mr. George Carne be the purser *pro tem.*—That Messrs. Prior, Crosthwaite, Carne, Partridge, Vigurs, Hainsellin, Mare, and Keen, be the committee for the ensuing quarter.—That the committee have full power to negociate with any party, for the assignment of the whole, or any part of, the mine and piece of land, upon such terms as shall appear most advantageous to the interests of the present company; and that the committee be further authorised to institute such actions and suits as may be necessary to obtain an equitable adjustment of the company's affairs; and that they be at full liberty to compromise any unpaid calls, and have entire discretion and power in the management of the mine, and in all matters and things connected therewith.—That every individual shareholder be earnestly requested to pay the amount of call due on his shares to the purser, or to Messrs. Harris and Co., Naval Bank, Plymouth, or their London agents, Messrs. Lubbock and Co., immediately on the receipt of this notice, which will be the means of aiding the committee in their arduous undertaking, and thus prevent an accumulation of expense, which will be highly prejudicial to the interests of the shareholders.—That Mr. Palmer's resignation be accepted, and this company bear testimony to the efficient manner in which he has discharged his duties as clerk of the mine.—That Capt. Paull's services, for the present, be discontinued. Capt. Cooke having stated (see report), that he can conduct the mine in a regular and proper course of working, and pay the cost without further aid from the shareholders.—That, upon this express undertaking, the mine be worked for the present under the control of the committee.—That Capt. Cooke's salary be reduced to six guineas per month. The following report from Capt. B. Cooke was read to the meeting:—The several pitches are throwing up a fair quantity of tinstuff—on the whole improved since last setting day, except the one in the back of the 28 fm. level, which is working under disadvantages for the present, at 13s. 4d. in the 1*l.* The one in bottom of 28 is looking well—set at 11s. 6d. Pitch in back of 42 set at 13s. 4d. (this pitch is much improved.) The pitch in 42 east is working at 9s. in the 1*l.*; I recommend your driving this level, as there is a south lode which will join it a few fathoms east (say 10 to 15). This junction in the 28 produces a great quantity of tin, and there is every reason to calculate that we shall have a great quantity from this 42 fm. level, as the tin lode is much larger than above, and more "Query," as you can see by the rate of setting. I have carefully calculated the value of the eastern ground, and hesitate not to say, that it can be worked without again calling for any aid from the shareholders.

Condurrow Mining Company.—At a meeting of adventurers, held at the mine, on Tuesday last, the accounts were produced, showing—Labour cost in Oct. and Nov., 656*l.* 13s. 8d.; merchants' bills, 290*l.* 13s. 5d.; dues of ore and tin, 45*l.* 16s. 1d.=993*l.* 3s. 2d.—By ores sold, 14th Oct., 747*l.* 2s. 11d.; tin sold, 11th Dec., 169*l.* 9s. 4d.; balance due to purser end Nov., 76*l.* 10s. 11d.=993*l.* 3s. 2d.—Balance due to purser end Sept., 163*l.* 8s. 11d.; ditto, end Nov., 76*l.* 10s. 11d.—leaves balance of 239*l.* 14s. 10d.—The following report was submitted to the meeting:—"It has often occurred to me, that mine reports, as they are usually given—encumbered with the technicalities of the profession—must be very dull and unintelligible to such adventurers as are not resident in the county, as well as to others not professionally connected with the calling. Those who are in the habit of attending the periodical meetings will, of course, have an opportunity of inquiring into the operative details to any extent they may think expedient; but the information given on such occasions, will frequently lead persons to draw fallacious conclusions: mining operations are generally attended with such uncertainty, that the shaft, level, back, bottom, or pitch, which may be looking well to-day, may, to-morrow, assume a very different aspect, and *vice versâ*. I, therefore, for the future, intend to state at our meetings whether the general appearance of the concern indicates to me a prospective profit or loss, and so give the adventurers some satisfactory data to guide them. The temporary failure of our principal ore level, the great depression of the standard (which alone made a difference on the amount of ores, as compared with the preceding sale, of 140*l.*), and the want of stamps to return our tinstuff, together, will cause the loss on the past two months of 76*l.* 10s. 11d. Our next account, to be held on the second Tuesday in Feb., 1848, will, according to appearances, clear off the entire balance against the mine, and probably leave a trifling amount in the hands of the purser; and the second account in 1848 will (supposing the mine maintain the same general appearance, and the price of copper and tin remain the same) leave a profit. The cost of the mine is mainly incurred in labour; the merchants' bills are comparatively light—not exceeding, on the average, 125*l.* per month. The coal consumed in pumping the water from the depth of 110 fathoms, for the steam-whim and crushing-engine, smithy, and account-house, is about 25 tons per month. The winding-engine is the property of the manager, who lets it to the adventurers at 8*l.* per month, he keeping the machine in repair at his own cost, the adventurers being at liberty to take the same off his hands whenever they may think it to their advantage to do so. The erection of the engine has been of great advantage to the mine, and saves an amount nearly equal to the entire agency. A surface and underground plan of the mine shows every light with reference to the working of the concern that can be desired; and, from first to last, the operations have been carried on with as much skill and energy as the manager possesses, and with more economy than would have been exercised had the mine been all his own."

Wheal Ash.—At a meeting of adventurers, held at Athenæum-terrace, Plymouth, on Tuesday, the 7th inst.,—Henry Luscombe, Esq., in the chair—a statement of accounts was produced, showing balance against the mine of 464*l.* 2s. 11d., to liquidate which a call of 1*l.* per share was made. The following report, from Capt. R. Edwards, was read to the meeting:—"The lode has certainly improved since my report on the 1st inst., the horse of killas, which divides the lode, having lessened, and the lode itself become more hollow; whilst the mixture of spar and mundic presents, if possible, a more kindly and promising appearance."

Wheal Sophia Mine.—At an adjourned meeting of adventurers, held at the counting-house on the mine, on Thursday, the 9th inst.,—Mr. Oakley Brighton, of Launceston, in the chair,—it was resolved—that the accounts to the end of the month of November be allowed and passed; that a call of 10s. per share be made, and paid by the 1st January, 1848; that the purser do give notice to those shareholders in arrear to pay the same by the 20th inst., and, in default of which, they be sued for the same in the county court; that the next general meeting will be held at the counting-house, on the mine, on Tuesday, the 8th February, 1848; that the thanks of this meeting be given to the chairman, for his able conduct in the chair.

Shares.—We understand, that shares were sold, by auction, at Truro, on Wednesday last, in Wh. Buckette, at 2*l.* 5s., and in Wh. Henry at 16*l.* each.

COX TOR SLATE QUARRY, DARTMOOR FOREST.

Sir,—I should feel obliged for any information that your Tavistock correspondent would furnish me and my friends through your Journal, respecting a company which, I was informed when at Tavistock about a month since, were about to open a slate quarry on (Cox Tor) Dartmoor Forest. Having occasion to pass that way, about two years since, with a friend who was deeply interested in a slate quarry, I called his attention to the identical spot, as certainly being a bed of slate. I should feel obliged for the particulars, relative to the trials, or who the company or managers are, that I could apply to them. I certainly think it a good speculation, and hope my expectations may be realised by the parties who have undertaken it.—A Builder: *Plymouth, Dec.* 11.

WHEAL SUSAN MINING COMPANY.

Sir,—Permit me to ask, through the medium of your Journal, what steps have been taken to procure the necessary title of the grant to the adventurers of this mine; it being high time that the shareholders should know what their standing now is; and, in case that no lease or grant should have been perfected, what remedy the present adventurers have against the parties concerned, for the recovery of moneys laid out. An Original Shareholder. *London Dec.* 17.

WHEAL BARBARA AND CASCADE MINES.

Sir,—I read in your last week's Journal a letter, signed "Heinrich Fischer." To that part of it, imputing to me a "*knowledge* of the circumstances under which Mr. Fischer obtained his shares in the above mines," I give a most unequivocal denial; I knew nothing of the transaction, from beginning to end. *British Mining Offices*, 12, *Haymarket, Dec.* 14. T. H. Taunton, Sec.

WHEAL BARBARA AND CASCADE MINING COMPANIES.

Sir,—A letter having appeared in your Journal with reference to the Cascade and Wheal Barbara Mines, I have only to repeat, that Mr. Fischer never held a share in either of the concerns; and which, if I am wrong, I call upon him to disprove.—Nicholas Truscott, Purser: 40, *Moorgate-street, Dec.* 17.

VENTILATION OF MINES.

[Specification of patent granted to Mr. John Wilcock, gent., in the county of York, for certain improvements in the ventilation of mines. Dated June 12, 1847; enrolled, December 12, 1847.]—*Patent Journal.*

The patentee, in this specification, states his invention to be for the purpose of improving, and more effectually securing, the better ventilation of mines, and consists of elongating the upcast shaft of the mine, by the addition of stacks, towers, or other similar buildings, erected above, or in connection with such upcast shaft, by which the upper orifice of the upcast shaft is elevated very considerably above the upper orifice of the downcast shaft, proportionably to various circumstances—as the relative depths of the two shafts, the velocity of the current of air through the mine, the nature of the gases, &c. The ventilation of mines is effected by the passing of a stream, or current, of atmospheric air through the various ramifications of the mine, carrying with it, in its course, the various noxious gases—as carburetted hydrogen, carbonic acid, and also the vitiated air, in its course, and escapes through the upcast shaft into the atmosphere. This current is, in most cases, caused—or the velocity of it is increased—by the application of heat to the upcast shaft, either at the bottom thereof, or at the orifice at the surface. The patentee proposes, by his invention, to increase the velocity of the currents through the upcast shaft, by erecting a stack, tower, or other similar building, above, or in connection with, the upcast shaft, which forms a continuation of the shaft, and through which also continues to flow the current of air. The height to which, in most cases, it will be sufficient to raise the elongated portion of the shaft, the patentee states to be from 60 ft. to 100 ft., though this will be governed much by circumstances, varying in different mines. The patentee gives several drawings, descriptive of his invention, as applied to several descriptions of mine shafts; as, first, to its application to mines having only one shaft; in this case, it is customary to make partitions down the shaft, thus forming downcast and upcast shafts. The patentee proposes leaving these arrangements as usual, but erecting over, or in connection with, the part of the shaft, a stack, tower, or other building, as a continuation of the upcast shaft. Secondly, to a mine in which the upcast shaft is also the working one; in this case, the minerals and workmen pass out of the lower part of the stack, or tower, by an aperture in the wall of it; and, thirdly, to a mine in which the upcast shaft is only employed for that purpose; in this case, a plain stack, or tower, is employed. In all cases, the patentee states, it is necessary that the sectional area of the stack, or tower, should be, at least, equal to the sectional area of the upcast shaft; and that, when it is necessary to have any openings into the lower part of the stack, or tower, the sectional area of the upper part of the stack, or tower, above the apertures, must be increased by the size of the apertures, for the purpose of not interfering with the upward current from the upcast shaft. The patentee, after describing his invention, claims the mode, or modes, of elongating the upcast shafts of mines, for the better ventilation of such mines, as described in the specification.

The Electric Telegraph.—The curious fact we were the first to state some weeks ago—that the electric telegraph would not work in the summit tunnel of the Manchester, Sheffield, and Lincolnshire—has been going the round of the papers, which have quoted all sorts of authority for the statement, except the original one. Somebody, who signs "Philo-Electron," attempts the following explanation:—"The air (he says) in every tunnel is highly charged with moisture, thus causing it to be a rapid conductor of the electric current. If the telegraph wires be not sufficiently insulated, or covered, with some substance which is impervious to damp, the electricity will escape into the surrounding air, and be dissipated. By the great draughts of air, which are caused by the several shafts to a tunnel, the electricity may thus be altogether led away. It appears to me that, were only one wire to be carried through the tunnel, and at each end of the tunnel another wire were to enter for a short distance, the one connected with the telegraph apparatus, and the other with the battery, the circuit would as readily be completed, as by having two wires running through the tunnel. This plan is similar to that practised at Portsmouth Dockyard, for carrying the telegraph across the harbour, where only one wire is carried under the water; and to form the connection, a short wire is dropped into the water at each side—one attached to the wire leading to the battery, and the other to the revolving needle of the apparatus. In the case of the tunnel, again, in the place of letting the disconnected wire enter the tunnel, they might be made to enter a bed of coke sunk in the earth at each end, and the earth would thus take the place of the other conducting wire. This, I believe, is the plan adopted by Mr. Bain, on the Edinburgh and Glasgow."—*Railway Chronicle.*

Draining of the Great Haerlem Lake.—In the last monthly part of *Chambers's Journal* we find the following particulars of the Haerlemmer, or Haerlem Lake:—"We well remember the sight of this vast sheet of water, when going along the road from Haerlem to Amsterdam; we found it stretching far away to the right, and covering, as we were told, an area of 70 square miles. A broad mound or dyke, on which the highway was extended, may be said to have been the boundary which prevented still further encroachments of the ocean. It is, however, on all sides carefully banked; and the annual expense incurred for these defences amounts to from 4000*l.* to 5000*l.* The Meer of Haerlem originated in a series of inundations of the sea about 300 years ago. Numerous schemes were subsequently devised to expel the ocean, but they were either not attended to, or failed in execution. The boldest of these projects was devised by a most ingenious mechanician, Jan Leeghwater; but we believe it only went the length of employing a vast army of windmills, each working a pump; and at any rate it was never properly entertained. The serious difficulty in the way of expelling and permanently keeping out the meer was the expense; latterly, however, since the discovery of steam-power, it has been made apparent to the minds of the Hollanders, that to keep dry, and to maintain the dykes around this large area, when brought into the state of a polder (dry patch of land), would not exceed, in yearly expense, the cost of maintaining the existing barrier dykes. As soon as this fact was satisfactorily established, the expulsion of the meer was determined on by the Dutch Government. A navigable ring canal was begun in 1840. At three distant points on the borders of the lake, as many monster engines are to be erected. These, it is calculated, will exhaust the waters, and lay the bed of the lake dry, by 14 months of incessant pumping; at a total cost, for machinery and labour, of 140,000*l.* The expense of maintaining the dykes and engines afterwards will be nearly 5000*l.* a year. The cost of maintaining the old barrier dykes amounted, as we have already stated, to about the same sum. The land to be laid dry is variously estimated at from 50,000 to 70,000 acres. Taking the lowest of these estimates, the cost of reclaiming amounts to 3*l.* sterling per imperial acre, and that of subsequently maintaining, to 2s. an acre. Independently, therefore, of the other advantages which will attend it, there will be an actual money profit from the undertaking. The quantity of water to be lifted is calculated at 1,000,000,000 tons. This would have required 114 windmills of the largest size, stationed at intervals round the lake, and working for four years, at a total cost of upwards of 300,000*l.*; while, at the same time, after the first exhaustion of the waters was completed, the greater number of these mills would have been perfectly useless. How wonderful appears the progress of mechanical art! Three steam-engines to do the work of 114 huge mills in one-third of the time, and at less than one-half the cost! One of these monster-engines of English (Cornish) manufacture—working, polypus like, 11 huge suckers at the extremity of as many formidable arms, has been already erected, and tried at the southern extremity of the lake, in the neighbourhood of Leyden. The annual drainage of the lake is calculated at 54,000,000 tons, of which 20,000,000 will require in some seasons to be lifted in the course of one or two months. Had our railway undertakings not sprung up to rival or excel it, we should have unhesitatingly claimed for this work the praise of being the boldest effort of civil engineering in modern times."—[The two remaining engines are now in course of construction at Copperhouse, Hayle, and Perran Foundries.]

NEW PATENTS.

D. W. Wire, St. Swithin's-lane, London, gentleman, for an improved manufacture of candles, and other like articles used for affording light. (Being a communication.)

H. Winter, Uxbridge-gardens, Park-place, Bayswater, Middlesex, gentleman, for improvements in the manufacture of rope, cord, line, and twine. (Being a communication.)

W. Maltby, Tredegar-square, Mile-end, gent., and T. Webb, Maro-street, Hackney, for certain improvements in the manufacture of spirits from grain, or other sacharine matters, and in the apparatus to be used therein.

G. A. Michant, Epieds, France, but now of New Bond-street, Middlesex, gentleman, for improvements in the production and application of heat, and in the manufacture of coke.—*Mechanics' Magazine.*

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Eleven o'clock.

Bank Stock, 9 per Cent., 186½	Belgian Bonds, 4½ per Cent., 87½ 8
3 per Cent. Reduced Ann., 84⅝ ⅞	Dutch, 2½ per Cent., 55½ 5
3 per Cent. Consols Ann., 86	Brazilian, 5 per Cents., 79 80
3 per Cent. Annuities, —	Chilian, 6 per Cents., 89½ 9½
3½ per Cent. Ann., 86⅝ ⅞	Mexican, 5 per Cents., 17⅞
Long Annuities, 8⅝	Spanish, 5 per Cents., 17⅛
India Stock, 10½ per Cent., —	Ditto 3 per Cents., 29
3 per Cent. Consols for Opg, 85½ ⅝	Portuguese, 4 per Cents., 22½ ⅝
Exchequer Bills, 1000*l.* 3d., 7 10 pm.	Russian, 5 per Cents., 107 6½

Mines.—The business in the mining share market during the week has been of an unusually limited character; and the general opinion is, that but little will be done until after the holidays. The reports, as well as private letters, continue to represent the general improvement in the mines throughout the counties of Cornwall and Devon; and we have no doubt much change for the better will take place with the New Year.

On Monday last, a special general meeting of the shareholders in the Australian Mining Company was held at the offices of the company, when a call of 10s. per share was deemed necessary, and made, thereby replenishing the funds with 10,000*l.* A feeling of dissatisfaction was manifested by the shareholders generally, in consequence of the return of 2000 original shares, appropriated to the local committee, who declined taking them upon the terms proposed. This we consider to be a matter of great importance to the interests of a company, when we take into contemplation the fact, that shares have changed hands in this market at a premium of upwards of 11*l.* per share, or 220,000*l.* for the mineral property of the company. We opine, this refusal speaks volumes to the proprietors as to the present value of the property, and furnishes a far more authentic report than any yet received from the accredited agents; for, if the parties who were to have been interested in the allotment considered it advantageous to their interests, the proposal would not have been rejected by those who are on the spot, and can investigate the truth for themselves. The shareholders are not to consider that every portion or section of land is to become a Burra Burra, a Kapunda, or South Australian Mine; and if the operations already commenced have not yet developed lodes of *fine copper*, still they have this consolation that they have surface ground to explore, sufficient for any capital that may be required. Had the above amount been employed in opening the lodes in any of the mineral districts of Great Britain, there is little doubt but before now they would have been in possession of profitable and permanent mines; whilst the means of transit and communication which are now presented, would bring the mine within a day's journey, and every shareholder an opportunity of inspecting for themselves.

By the Indian Mail, we learn that the copper market, both at Calcutta and Bombay, has advanced; and, from the smallness of stock on hand, a further advance was anticipated. At a late ticketing meeting in Cornwall, some remarks were made on the lowness of the standard; whilst the prices obtained by the smelter, both in home and foreign markets, were so highly remunerative. The head of an eminent firm admitted the fact, adding that "they were at a loss to whom they could sell, with safety, in the present position of the commercial market." This may be one plea, but it cannot be justified by the state of the commercial interests of India—especially, if we can place any confidence in the regularity and extent of remittances from the merchants there.

We learn that the foreign share market has been equally heavy, and that very few transactions have taken place.

Since our last, we find the following arrivals with specie—viz.: *ex Wellington*, from New York, with two boxes, and three other packages, of specie, to four different houses in the metropolis; *John Bull*, from Hamburgh, eight casks, two boxes, and one parcel of gold, consigned to order; *Caledonia*, also from Hamburgh, five casks and four bags of gold; *Washington*, from the United States, seven packages of gold, consigned to different firms were landed at Southampton, and forwarded by rail to the Bank of England for delivery to the parties. By the arrival of the *Arcadia* at Liverpool, on Thursday, from New York, 80,000*l.* in specie has been received; and 30,000*l.* *ex Hottinguer*, from the same port, also arrived on that day. The packet-ship *Roscius* would leave New York on the 1st inst., with 22,000*l.* for England.

Hull, Thursday.—The sharemarket remains flat. There has been more disposition to deal in the Norfolk lines lately, and East Anglian preferences have attracted some attention. North British have declined, and at our present writing are heavy at the quotations. The approach of Christmas, and the indisposition generally evinced at this time of the year to enter into new arrangements, have, doubtless, some effect. So far as opinions can be collected, there is evidently more confidence, that better times are not far distant.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Price per share	Last Div.	*Traffic Returns.* 1847	1846
Arbroath and Forfar	15	£179,939	26	4*p.c.*	£151	178
Chester and Birkenhead	15	706,793	38	—	514	476
Dublin and Drogheda	35	733,655	54	3½	631	627
Dublin and Kingstown	7½	473,282	—	7	587	574
Dundee, Perth, and Aberdeen	36½	585,745	35	6	709	245
East Lancashire	24	1,207,490	21½	—	805	582
Eastern Counties	202½	7,698,370	15½	5	10403	8485
Eastern Union	43½	979,926	60	—	1100	406
Edinburgh and Glasgow	50	2,375,745	45½	6	9702	2958
Edinburgh and Northern	29	953,207	16½	—	528	—
Glasgow, Paisley, and Ayr	60½	1,890,547	121	7	2112	1975
Glasgow, Paisley, & Greenock	22	838,964	18½	3	859	827
Gt. Southern & Western, Ireland	110½	1,876,326	22½	—	1444	930
Great Western	240½	10,630,763	96½	8	16522	14959
Kendal and Windermere	10½	147,001	23	—	85	—
Lancaster and Carlisle	70	1,291,913	55½	—	1082	—
Lancashire and Yorkshire	92½	6,807,314	76	7	8234	7886
London and North Western	428	20,010,467	152½	9	33721	34975
London and Blackwall	4	1,146,289	4½	¾	678	688
London, Brighton, & South Coast	147	5,659,180	43½	4	6821	6280
London and South-Western	186	5,836,132	45	9	6430	5606
Londonderry and Enniskillen	14½	160,013	24½	—	—	—
Manchester, Sheffield, & Lincolnsh.	49½	2,078,135	80	5	1809	1739
Maryport and Carlisle	28	424,417	—	3	591	495
Midland Company	382	8,658,604	107½	7	18235	16312
Midland Great Western (Irish)	26½	583,776	—	—	801	—
Newcastle and Carlisle	65	1,184,080	117	6	1687	2084
Norfolk	70½	1,375,633	81	6	1863	1219
North British	78	2,514,150	26½	5	1665	1207
Shrewsbury and Chester	17	591,158	21½	—	530	228
South Devon	29	1,339,869	24	—	601	287
South-Eastern	157½	6,398,218	30⅝	6	6961	6475
Taff Vale	38	785,607	—	5½	1682	1228
Ulster	25	646,211	52	6	665	771
Whitehaven Junction	12	130,000	—	4½	220	—
York, Newcastle, & Berwick	236½	3,685,102	33½	9	10636	6801
York and North Midland	196	3,196,869	75½	10	6835	5234
FOREIGN RAILWAYS.						
Amiens to Abbeville	28	573,338	—	4	830	—
Antwerp to Ghunt (three weeks)	31	—	—	—	1313	—
Belgian	—	—	—	—	64135	60670
Dutch Rhenish	57½	—	2⅝	—	929	878
Northern of France	211	2,000,000	11½	4	13136	8212
Orleans to Bourges (Central)	70	—	—	—	2811	—
Orleans to Tours	72	600,000	—	5	3504	2463
Paris and Orleans	82	2,011,720	46½	12½	7790	7085
Paris and Rouen	85	2,082,916	34½	9½	5552	5616
Rouen and Havre	59½	—	19	4	2220	—
Strasburgh and Basle (monthly)	88	—	8	1½	9080	10227
West Flanders (ditto)	—	—	1½	—	1615	—

Total earnings for last week, £155,136, being an increase of £21,330 over last year.

Aberdare.—The mineral resources of this once very pretty and picturesque valley seem to be only just developing themselves. Though there are very large coal-works now in work, we understand that operations are going on by Mr. Llewelyn, on the Fforest Uchal Farm (a part of the Cresselly estate), towards working the coal, which it is known the estate abounds in. The facilities of its transit cannot be well surpassed, when it is known that the Aberdare canal is within 50 yards of the pit's mouth, and the railway within a quarter of a mile. In addition to this, sinking operations are going on upon the estate of J. Bruce Pryce, Esq., near a place called Builfa; and, when all these works come into full operation, the valley of Aberdare and its tributaries will be able to boast of mineral resources equal to any place in the kingdom for the number of its acres. It may, also, be remarked that, for quality, the coal is unsurpassed, commanding, for steam purposes, the highest price in the London markets.—*Monmouthshire Merlin.*

Notice to the Dowlais Miners.—A notice has been given to the above body of workmen employed at these large works, that they will be discharged in the course of a few weeks. It has, as it might be imagined, caused the deepest regret, not only to the men themselves, but also to the great bulk of the tradesmen living at the above place.—*Ibid.*

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Dec. 11, was 17,561; amount of money, £73 5s. 1d.

PRICES OF MATERIALS—NOV. 1847.

CAST-IRON.

Cylinders, covers, pistons, piston-caps, nozzles, air-pumps, and covers, bored and turned	30s per cwt.
Cylinder cases	30
Cylinder bottoms, condensers, and bottoms	22
Steam and eduction pipes	from 11s to 14s
Feed pipes	from 9s 6d to 11s 6d
Hot-water cisterns	18s
Beams, cast open	13—close, 17s
Gudgeons, troughs, shafts, bearings, and top blocks, sockets & saddles	11s—fitted, 17s
Hollow stools for beams	16s
Gudgeons and shafts, turned	17
Fly-wheels, complete—cast-iron only	14
Segments and arms for ditto	11
Centre pieces for wheels, capstans, &c.	14—bored, 18s
Spur-wheels, 1 cwt. and above	14 } If bored
ditto under 1 cwt.	16 } or turned,
Bevil ditto	16 } charged 4d
Under 1 cwt.	18 } p. cwt. ex.
Tooth segments	14
Cranks, not bored	12
ditto bored	18s to 24s
Manhole branches and doors	14
Fire door frames, sleepers, and fire bars, cast open	8s—close, 10s 6d
Dampers and frames, cast open	9s—close, 10s
Plain pumps, 4-inch bore, and above and windbores	9
Short ditto	10
Working barrels, 5 inches and above	17s—under, 21s
Plunger, knee, and H-pieces, and top door pieces, under 4 feet long	17
Doors and bottoms for ditto, cast open	8s—close, 9s 6d
Clack-seat pieces and doors	13
Plunger poles for shaft work, 6 inches diameter, and above	27
Stuffing boxes and glands, bored	22
Valves, seats, and clacks	11—turned, 18s
Air pipes, 4 inches diameter, and 6 feet long	9s. 6d. each.
Whim shieves, 4 feet diameter, light pattern	17s.
Capstan and whim sheaves, all sizes, heavy pattern } Flat rope shieves }	10s. per cwt.
Tram wheels	9s—bored, 14s
Boiler stands	8s. 6d.
Feedpole cases, with stuffing boxes and glands, bored } Plunger cases, with stuffing boxes on them, 6 inches and above }	28s.
Sweep rods	15s—turned, 25s
Foundation plates	13
Mortice wheels	16
Kibble moulds } Anvil blocks }	12
Hammers, anvils, and bits } Earth eyes }	13
Tram saddles	11
Stamp heads and grounds	8
Cams for stamp axles	9
Stamp tongues	12
Bucking plates	8
Dressing plates, and backs for grates, cast open	10
ditto ditto cast close	14
Crushing rolls	9
Mandrills	17—turned 23s
Pillars	12—fluted, 13s
Furnaces—green sand	13—loam, 18s
Shaft pulleys, or rollers	10
Sampling plates	14
Open top water pipes	12
Iron borings	6—fine, 7s
Angular bars	13
Frames for crushers	12
Block tin and ingot moulds	16
Barrow wheels	14
Wheel and pipe boxes	18s 8d
Pall plates	16s
Sash weights and clock weights	11
Grate castings, iron	16s to 18s
Shoes for drags	10s 6d
Hawser pipes	20s
Plough chips	12
Grate plates for stamps open	10—close, 14s
Stamp guides	13
Chain guides	11
Weights, adjusted ½ cwt., and above	4s 3d each
14 lbs., 2s 3d; 7 lbs., 1s 8d; 4 lbs., 1s 4d; 2 lbs., 1s 2d; 1 lb., 9d.; ½ lb., 8d	
Single valve boxes, complete, 4 inches, 4l 10s; 3½ ditto, 3l 15s; 3 ditto, 3l 3s; 2½ ditto, 3l; 2 ditto, 2l 10s	
Boring working barrels	5s per inch
Turning plunger poles	7

WROUGHT-IRON.

Plain cylindrical boilers, made of best common plates, and best rivet iron	22s per cwt.
Whim kibbles, hammered iron	21
Ditto rolled	19
Winze kibbles	10 each.
Tapered rod-plates, hammered from scraps, 6 in. wide, and under, in slabs	16 per cwt.
Ditto 7 in. wide	17
Ditto 8 in. wide	19
Ditto 6 in. wide, and under, fitted in lengths and holes, bored, complete	20
Ditto with square holes, cut out	21
Ditto 7 in. wide, holes bored, complete	21
Ditto 7 in. wide, square holes, complete	22
Ditto 8 in. wide, holes bored, complete	24
Ditto 8 in. wide, square holes, complete	25
Miners' shovels	34
Steel point ditto	54
Flat thread tops	4½d per lb.
Valve iron	19s per cwt.
Faggotted iron, single	14
Ditto double	16
Piston and air pump-rods, complete	8d to 1s per lb.
Kibble plates, hammered	19s per cwt.
Ditto rolled	17
Axle arms and shear moulds	16
Grate plates, rough	19
Ditto middle cut	25
Ditto finished	29
Furnace bottoms	21
Piston rings, turned	10d to 1s per lb.
Loops	5d to 8d
Outer connection caps	26s per cwt.
Chains made of the best scrap iron, 11-16ths and 5-8ths	27
9-16ths and ½, 29s; 7-16ths, 30s; 3-8ths, 31s.	
Chains made from S. C. 3l. per ton less.	

BRASS.

Best composition metal plunger poles, and linings for air pumps	1s 7d per lb.
Covers, buckets, &c., bored and turned	1s 6d
Bearing and bucket brasses	1
ditto ditto bored	1s 3d
Working barrels, bored	1s 6d
Brass bushings, large	2
Steam valves and seats	2s 3d
ditto double beat	2s 6d
Brasses for parallel motion	1s 8d to 1s 10d

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Adair's Main 16 6—Buddle's West Hartley 16 6—Carr's Hartley, 16 6—Davison's West Hartley 17—Dipton Tanfield 15—Hasting's Hartley 17—New Tanfield 16—Ord's Redheugh 16 6—Original Pontop 16—South Pontop 15—Stewart's Hartley 16 to 17—Tanfield Moor 17—Tanfield Moor Bute's 15 9—Townley 16 6—West Wylam 16 9—West Hartley 17—Wylam 16 9—Wall's End Framwell-gate 19—Hedley 19 6—Hebburn 19—Walker 19 3—Washington 19—Eden Main 20 3—Harraton Main 16 6—Belmont 20 3—Hetton 21—Lambton 20 9—Russel's Hetton 20 9—Shotton 20 3—Stewart's 21—Whitwell 19 6—Hudson's Hartlepool 20—High Thornley 18—Hengh Hall 19 9—Leasingthorne Hartley 16—Adelaide Tees 20 6—Denison 19—Richardson's Tees 19—South Durham 19 9—Cowpen Hartley 17—Howard's West Hartley Netherton 17.—Ships at market, 155.

WEDNESDAY.—Adair's Main 16 6—Buddle's West Hartley 17—Chester Main 18 6—Davison's West Hartley 17—Dipton Tanfield 15—Hasting's Hartley 17—New Tanfield 16—Ord's Redheugh 16 6—Original Pontop 15 9—South Pontop 15—Stewart's Hartley 16 6 to 16 9—Townley 16 6—West Wylam 16 9—West Hartley 17—Wylam 16 9—Wall's End Acorn Close 19 6—Bewicke and Co. 19 6—Clennell 17 6—Gosforth 19 6—Heaton 19 6 Braddyll's Hetton 20 6—Hetton 21—Lambton 20 9—Lumley 19 6—Scarborough 18 6—Stewart's 21—Cassop 20 3—High Thornley 18 6—South Durham 19 9—Tees 20 9—Whitworth 16 6—Cowpen Hartley 17—Howard's West Hartley Netherton 17—Snapethorpe 19.—Ships at market, 81.

FRIDAY.—Adair's Main 16 6—Buddle's West Hartley 17 6—Dipton Tanfield 15—Ord's Redheugh 16 6—Original Pontop 16—South Pontop 15—Stewart's Hartley 17—Tanfield Moor Bute's 15 9—Townley 16 9—Harraton Main 17—Wall's End Acorn Close 19 9—Clennell 18—Hedley 20—Hilda 19 6—Bell 21 9—East Hetton 19 6—Hetton 21 6—Keepier 21—Morrison 15—High Thornley 18 6—Adelaide Tees 20 9—Seymour Tees 20 6—Tees 21 3—Whitworth 17.—Ships at market, 37: sold, 26; unsold, 11.

Ayrshire Malleable Iron Company—(*From a Correspondent*).—We understand that the embarrassment of this company is producing great distress and apprehension—5*l.* per share only has yet been paid towards the amount of the original shares; and it is supposed that the remaining 15*l.* per share, still to be called up, will be insufficient to meet the liabilities of the company, which are about 200,000*l.* A gentleman in Edinburgh, holding 700 shares, has, we understand, been compelled to suspend payment, in consequence of the difficulties of this company.

Berks and Hants Railway.—The opening of this line for public traffic, originally fixed for the 15th inst., will take place on Monday next. Capt. Symons, the Government inspector, is to go over the line this day. There are to be five trains each way daily between Reading and Hungerford—all of which are in connection with through trains. The line is 25½ miles long. The fares are—for first-class, 6s.; and for second-class, 4s. These are exceedingly high charges, and not at all calculated to develope the traffic. The cost of the line has been about 20,000*l.* per mile.—*Railway Record.*

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	7	—
512	Albert Consols	1	2¼
1024	Alfred Consols	4¼	30
256	Alternum Consols	2	15
235	Andrew and Nanglles	28½	11¾
10000	Ayrshire Iron Company	5	1¾
1624	Balleswidden	9	18
128	Balnoon Consols	25	25
10000	Banwen Iron Co.	2	—
1000	Barristown	4½	10
4000	Bedford	2¾	3¼-½
128	Besore Lead Mine	14	10
315	Birch Tor Tin Mine	24½	—
8000	Blaenavon	50	22
100	Botallack	175	80
120	Brewer	5	7
10000	British Iron, New, regis.	10	12½
—	Ditto ditto, scrip	10	12
128	Budnick Consols	52½	40
128	Burthy	20	21
100	Bwlch Cwmerfin	20	—
128	Callestock	17	30
1000	Callington	19	34
20000	Cameron's Steam Coal	4	3¼-½
256	Caradon Copper Mine	9½	1
256	Caradon Mines	22½	17
256	Caradon United	24	5
256	Caradon Wh. Hooper	21	12
1000	Carn Brea	15	102½
2048	Cascade	1	2
112	Charlestown	220	30
166	Cleveland	9	5
512	Coatlithe Hill	½	2
1900	Combmartin	7½	3
500	Comblawn	5½	6
128	Comfort	45	100
256	Condurrow	20	35
2560	Cook's Kitchen	14	2
2048	Coombe Tin Mine	4½	2
1000	Coombe Valley Quarry	2	3
1000	Copper Bottom	1	1
1024	Cosheen	4½	20
240	Craddock Moor	15½	15
128	Creeg Braws	120	100
500	Cubert Mine	12½	15
2048	Dartmoor Consols	2	2
300	D.Prior & Buckfastleigh	14	26
7500	Demelza Mines	2	2
7100	Derwent	8½	5
1024	Devon&CourtenayCon.	7½	2
1024	Devon Great Consols	1	225
1000	Dhurode	2	5
186	Dolcoath	30	50
2560	Drake Walls	4	4
10000	Durham County Coal	45	9
3000	Dyfngwm	10	12½
256	East Alvenney	10	25
112	East Caradon	42	42
2048	East Crowndale	4½	3½
512	East Combe Silver-Lead	6½	6½
128	East Pool	5	25
100	East Relistian	22	40
—	East Wheal Albert	1	3
94	East Wheal Crofty	280	125
256	East Wheal Fortune	2	3
128	East Wheal Rose	50	1250
2048	East Wh. Rough Tor	¼	2
—	East of Scotland Iron Co.	2½	¾
123	East Wheal Seton	14	15
256	Elborough	1½	2
256	Exmoor Wh. Eliza	3½	6
512	Fowey Consols	40	45
6400	Gadair	2	2
20000	Galvanised Iron Co.	10	9½
10000	Gen. Mining Co. for Irel.	2	1½
2048	Georgia Tin Mines	1½	1½
256	Gonamena	31½	45
128	Goonvrea	4	1½
244½	Grambler & St. Aubyn	—	12
100	Great Consols	1000	400
256	Great Callestick Moors	22	25
2560	Great Michell Consols	1½	3½
256	Great Resugga Moor	7	10
512	Gt. Wh. Rough Tor Con.	13½	25
100	Grogwinion	5	—
256	Gwinear Consols	7	20
1000	Harrowbarrow Old Mine	8½	2
6000	Heignston Down Con.	½	2½
256	Herodscombe	4½	4½
256	Herodsfoot	16	19
10000	Hibernian	12½	1¾
239	Hobb's Hill	6	3
1000	Holmbush	19	11
827	Kirkcudbrightshire	5½	6
2048	Lamherooe Wh. Maria	11	4
128	Lelant Consols	90	60
160	Levant	—	90
1000	Lewis	15	6½
1000	Llwyn Malees	5	—
3600	Llynvi Iron	50	50
256	Lostwithiel Consols	15	15
6000	Marke Valley	10	3
5000	Mendip Hills	2½	1½
5000	Merionethshire Slate & Slate Slab Co.	1½	2
7000	Mining Co. of Ireland	7	6½
256	New East Crowndale	3½	3½
128	North Fowey Consols	30	30
100	North Pool	45	370
70	North Roskear	10½	310
256	North Wh. Abraham	1	1
262	North Wh. Leisure	1½	2
128	North Wh. Providence	2½	3
15000	Northern Coal Co.	23	2
128	Par Consols	900	1000
1000	Pennant	1½	2½
100	Penrhiw	30	65
1280	Perran St. George Un.	13	20
128	Perran Wh. Virgin	9½	15
512	Plymouth Wh. Yeoland	4½	22
256	Polsaith Consols	4½	7
112	Providence Mines	35	45
10000	Rhymney Iron	50	20
10000	Ditto New	7	6½
256	Rose Consols	10	2
1000	Rosewall Hill	1	5
256	Rosewarva Mines	—	12
—	Shotts Iron Company	50	55
2500	Silver Valley	5	2
1100	South Dolcoath	3	2½
128	South Caradon	10	450

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
256	Sth. Friendsh. Wh. Ann	16	25
200	South Harvannah	10	25
256	South Tolgus	7½	40
256	South Trelawney	20	8½
128	South Yeoland	16½	20
128	South Wheal Basset	110	90
124	South Wh. Francis	160	200
256	South Wh. Hope	—	5
1000	South Wh. Maria	2½	2
256	South Wheal Rose	11½	1
256	South Wh. Sophia	4	4½
10000	Southern & Western, Irish	2	4
280	Spearne Moor	30	40
256	St. Austell Consols	9	10
94	St. Ives Consols	—	320
128	St. Michael Penkivel	5	10½
1000	Stray Park	43	20-2
9600	Tamar Consols	3	4
1024	Tavy Consols	4	5½
6000	Tincroft	7	8
1000	Tin Vale	2	2
128	Tokenbury	143½	10
256	Trehane	2	27
5000	Treleigh Consols	6	3½
2000	Trenance	2	50
96	Tresavean	10	250
120	Trethellan	5	16
120	Treviskey and Barrier	130	140
288	Trevean	1½	25
128	Trewellard	12	26½
100	United Mines	300	350
256	Wellington Mines	15	30
128	West Basset	45	30
256	West Caradon	20	140
128	West Cargoll	2	12
512	West Fowey Consols	40	15
256	West Providence	9	20
200	West Seton	40	150
—	West of Scotland Iron Co.	210	210
120	West Trethellan	5	35
256	West United Hills	6½	1
256	West Wh. Friendship	9	12
3845	West Wheal Jewel	11	1½
2560	West Wh. Maria	2½	1½
2560	West Wheal Rough Tor	¼	2
256	West Wheal Shepherd.	5	2½
256	West Wheal Tolgus	21½	5
256	West Wheal Treasury	19	10
5200	Wicklow Copper	5	11½
184	Wheal Adams	51	10
1000	Wheal Agar	—	10
256	Wheal Albert	10	8
128	Wheal Acland	13	2
256	Wheal Allen	2	5
237	Wheal Anderton	18	25
128	Wheal Ann	—	50½
512	Wheal Ann, Bridford	1	2
512	Wheal Anna Maria	—	5
1024	Wheal Ash	4½	6
120	Wheal Bal	5½	20
2560	Wheal Barbara	1½	4-5
256	Wheal Benny	10½	6
256	Wheal Blencowe	8	8
256	Wheal Bucketts	20	5
256	Wheal Calstock	3	4
136	Wheal Clifford	190	190
1024	Wheal Coad	½	1
128	Wheal Courtenay	—	20
6000	Wheal Curtis	2½	3-3½
256	Wheal Dyke	12	13
256	Wheal Fortescue	6½	5
512	Wheal Fortune Consols	3½	6½
2048	Wheal Frederick	2	2
388	Wheal Franco	27	30
128	Wheal Harriet	45	50
256	Wheal Jane	21	15
256	Wheal Louisa	8½	8
112	Wheal Margaret	79	250
256	Wheal Maria (Hayle)	24	2
512	Wheal Mary Ann	5	18
256	Wheal Mary Consols	38	25
210	Wheal Prospect	4	7
120	Wheal Reeth	27	80
128	Wheal Rose	60	45
2048	Wheal Samson	½	20
99	Wheal Seton	214	1100
256	Wheal Sisters	29½	20
256	Wheal Sophia	5	10
128	Wheal Spearne	10	75
128	Wheal St. Ann	9	15
260	Wheal Trelawney	7½	95
256	Wh. Tremaine (St. Ervan)	4½	20
256	Wheal Tremayne	35	25
128	Wheal Trew	20	21
256	Wheal Trevenna	3	4
92	Wheal Tryphena	140	265
128	Wheal Venland	13½	4
256	Wheal Vlow (Perranz.)	½	½
184	Wheal Vyvyan	—	60
256	Wheal Williams	6	12

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14½	3½
15000	Asturian Mining Co.	11	5½
20000	Australian	2	2½
10000	Anglo-Mexican Co	100	2
12374	Ditto Subscription	25	2½
3000	Bolanos	150	3½
2000	Ditto Scrip	15	3½
12000	Brazilian Imperial	23	7½
10000	Cobre Copper Co.	40	18
8500	Colombian Co. regis.	55	} 1
5000	Ditto Scrip	5½	}
5000	Copiapo Mining Co	14	2½
10000	General Mining Ass'n.	20	13-14
5000	Kinzigthal Mining Ass.	2	2½
20051	Mexican Company	59	—
2000	Mexican & South Amer.	7	1½
5000	Mocaubas & Cocaes	30	6
29320	{ Rl. del Monte, regis. / Ditto unregistered }	28½	1½
	Ditto Red Debentures	—	10
	Ditto Black ditto	—	8
	Ditto Loan Notes	150	60
7000	Royal Santiago	10	6
2000	Pachuca Mines	4	4½
11000	St. John del Rey	15	6½
13174	United Mexican ...Av.	28½	1½-2

SOUTH AUSTRALIAN SHARE MARKET.

Shares.	Company.	Paid.	Price.	Shares.	Company.	Paid.	Price
2000	Adelaide	5	7½	1000	Poonawurta	—	9½-10
6000	Barossa Range	½	2½	400	Princess Royal	34	259
2464	Burra Burra	5	110	10000	Royal Mining Company	½	1½
436	Grand Junction	15	28	10000	Royal South Australian	—	55½
100000	Scottish Invest. Co.	1	1½	600	Victoria	2	3
18	South Para	15	50	500	Wakefield	2	3

** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

MISCELLANEOUS COMPANIES.

Shares.	*Companies.*	*Paid.*	*Div. p. cent.*	*Price.*
10,000	Assam Tea Company	£20	—	£ 3
1,080	Auction Mart	—	£ ½	28
10,000	Australian Agricultural	30	1	20
10,000	Australian Trust	35	—	30
8,000	British Alkali	25	4	16¾
10,000	British American Land	35½	—	14
8,600	British Rock and Patent Salt	35	18	11
8,915	Canada	32½	6	30
—	City Bonds (Navigation)	—	3½	89
1,800	Corn Exchange	37½	1½	26½
5,000	Droitwich Patent Salt	25	¾*	11
2,700	Equitable Reversionary	95	4½	87 90
—	General Reversionary Interest	100	5	100
0,000	General Steam Navigation	14	1¾*	23½
—	Hudson's Bay Stock	—	10	230 240
2,100	Hungerford Market	100	¾	—
1,500	London Commercial Sale Rooms	—	1½	31 32
8,000	London Reversionary	22	—	23 24
300	Margate Pier	—	10	196
10,000	Mexican and South American	7	—	3½ 4
20,000	New Brunswick	75	—	—
11,600	Peninsular and Oriental Steam	50	7	56
6,600	Ditto	40	—	—
5,887	Reversionary Interest Society	100	4½*	97
—	Royal Mail Steam	—	5½	52 53
8,000	South Australian	25	6	—
20,000	Upper Canada	100	5	93 94
20,000	Ditto	—	5	93 94
10,000	Van Diemen's Land	20	—	4

JOINT-STOCK BANKS.

Shares.	*Companies.*	*Paid.*	*Div. p. cent.*	*Price.*
22,500	Australasia	£40	£3	£15
20,000	British North American	50	5	44½
20,000	Colonial	25	5	14½
—	Commercial of London	20	6	22 23
4,000	Ionian State	25	6	24½ 25
60,000	London Joint-Stock	10	6	15
30,000	London and Westminster	20	6	23½
10,000	National Provincial of England	35	5	35
20,000	National of Ireland	22½	5	19½ 19¾
20,000	Provincial of Ireland	25	8	40
4,000	Ditto New	10	8	19½
20,000	Union of Australia	25	6	24 25
10,000	Ditto New	2½	6	2½ 2¾
60,000	Union of London	16	5	10½

GAS-LIGHT AND COKE COMPANIES.

Shares.	*Companies.*	*Paid.*	*Div. p. cent.*	*Price.*
5,000	British (London)	£18	£1*	£17½
5,000	Ditto (country)	19	1½*	24
1,000	City of London	100	10	290
1,000	Ditto New	100	10	210
4,000	Equitable	50	2½	38
10,000	European	20	1½	18
12,000	Gas-Light and Coke Chartered Co.	50	6	57½ 58½
6,000	Ditto New	10	6*	12
9,000	General United Gas-Light Company	50	2	17½ 18½
10,000	Imperial	50	6	78½
46,400*l.*	Ditto Debentures	100	4	100
8,000	Imperial Continental	39½	4½*	56 58
7,000	Ditto New	28	4½*	61
54,500*l.*	Ditto Debentures	100	5	100 102
2,000	Independent	40	6	64
3,000	London	50	6	40
3,000	Ditto	50	5	48
9,000	Phœnix, or South London	43	5	36½
1,000	Ratcliff	80	5	80
4,000	South Metropolitan	25	6	31½ 32½

* Those marked with an asterisk (*) are dividend per share.

LATEST CURRENT PRICES OF METALS.

LONDON, DECEMBER 17, 1847.

	£	s.	£	s.	d.
Iron—Bar a. Wales ..ton	0	0—	7	15	0
,, ..London	0	0—	8	15	0
Nail rods ,,	0	0—	10	0	0
Hoop (Staf.) ,,	11	0—	11	10	0
Sheet ,, ,,	0	0—	12	0	0
Bars ,, ,,	0	9—	10	5	0
Welsh cold-blast foundry pig	4	0—	5	0	0
Scotch pig b, Clyde	2	6—	2	8	0
Rails, average	0	0—	7	0	0
Chairs	0	0—	4	17	6
Russian, CCND c	0	0—	—		
,, PSI	0	0—	—		
,, Gourieff	0	0—	—		
,, Archangel	0	0—	13	10	0
Swedish d, on the spot	0	0—	11	5	0
,, Steel, fagt.	0	0—	16	0	0
,, ,, kegs e	0	0—	14	0	0
Copper—Tile f	0	0—	97	0	0
Tough cake	0	0—	98	0	0
Best selected	0	0	101	0	0
Ordin. sheets, lb.	0	0—	0	0	11

	£	s.	£	s.	d.
Copper—Ord. bottoms	0	0—	0	0	12
Yellow Metal Sheathing	0	0—	0	0	9½
Tin—Com. blocks g ..cwt.	0	0—	4	2	0
,, bars	0	0—	4	3	0
Refined	0	0—	4	6	0
Straits h	0	0—	3	18	0
Banca	4	2—	4	4	0
Tin-Plates—Ch., IC i, box	1	8—	1	10	0
,, IX	1	14—	1	16	0
Coke, IC	1	3—	1	4	0
,, IX	1	9—	1	10	0
Lead—Sheet k ..ton	0	0—	19	0	0
Pig, refined	0	0—	19	10	0
,, common	0	0—	17	10	0
,, Spanish, in bd.	0	0—	17	0	0
Red	0	0—	19	10	0
Dry White	0	0—	24	0	0
Ground ditto	0	0—	—		
Shot (Patent)	0	0—	20	10	0
Spelter—(Cake) l on spot	0	0—	19	0	0
Zinc—(Sheet) m export.*	0	0—	27	0	0
Quicksilver n ..lb.	0	0—	0	4	6

a Discount 2½ per cent. b Net cash. c Discount 2½ per cent. d Ditto e In kegs ½ and ¾-inch. f Discount 3 per cent. g Ditto 2½ per cent. h Net cash in bond. i Discount 3 per cent. k Ditto 2½ per cent. l Net cash. m Discount 1½ per cent. n Discount 1½ per cent. * For home use it is 32*l.* per ton.

[FROM OUR CORRESPONDENTS.]

Iron.—The demand for all descriptions is still languid, and the present quotations are scarcely supported.—Copper continues firm, with a good home demand.—Tin—English has been in improved request since the fall on the 6th inst.—stocks are low; 1200 slabs of Straits were offered at public sale this week, and about 400 slabs found buyers at 78s.; in Banca nothing doing.—Lead and Tin-Plates remain as last quoted.—Spelter looks rather firmer; a few small sales have been made at 19*l.*, and holders appear disposed to maintain that rate.

Note.—Error in last week's Journal: after the word iron, Welsh and Staffordshire continue at our last quotation—read, *without* a very great business, instead of, *with* a very great business.

GLASGOW.—We have to notice a slight decline in the price of Scotch pig-iron, since our last. The sales of the week chiefly consist of small lots to consumers, at 47s. 6d. to 48s. 6d.—cash on receipt of bill of lading. One parcel was brought in the market for prompt cash, and realised 46s. To-day, the market closed heavily at 46s. 6d. to 47s. 6d. for mixed numbers—cash—according to the term of payment. The demand has been falling off during the last week or two, as is usually the case—apart from the present existing depression—at this season of the year.—*December* 16.

BIRMINGHAM.—We regret to observe the reckless alacrity with which statements prejudicial to the iron trade of South Staffordshire are promulgated in various quarters. That the trade has been lamentably affected by the suspension of the railway works, we are quite aware; but there is sufficient elasticity remaining to preserve the district from any serious consequences, unless the folly of individuals should succeed in undermining the credit of their neighbours. At a meeting of the trade, which was held last week, it was resolved that the wages of the blast-furnace men should be reduced 20 per cent., and those of the mine coal colliers 9d. a day, and a notice in accordance with this resolution was very generally given on Saturday last. To-day (Thursday), it is understood that a meeting will be held in Birmingham, with a view to the reduction of the wages which have latterly been paid to the puddlers and mill-furnace men, and it is expected that a reduction of 15 to 20 per cent. will in this case be found necessary. If such should be the result, a general notice will be given on Saturday. In the mean time, with a view to prevent unnecessary alarm, we are bound to state, that although several furnaces have been blown out, no resolution has been passed by the trade; and in this respect, each member will act upon his individual discretion. The mill and forges are partially employed, but the value of iron has not materially altered for several weeks.—*Advertiser.*

Thursday Evening.—We are sorry to say, the highly respectable firm of Jones and Oakes, of the Ketley Iron-Works, have been obliged to issue circulars, convening a meeting of their creditors for Tuesday next, at Wolverton. Their obligations are said to amount to 100,000*l.*, but it is confidently stated, that time will enable them to pay all in full. It is to be hoped that arrangements will be made to continue the works, for the sake of the numerous hands employed. To-day, a meeting of the leading ironmasters of this district was held at the Union Inn, in Union-street, for the purpose of considering the propriety of reducing the wages of the puddlers and mill-furnace men, when, it is to be regretted, the state of the trade justified a resolution in favour of the object of the meeting.

LEAD ORES.

Sold at the Mine.

Mines.	*Tons.*	*Amount.*	*Purchasers.*
East Rose	86	£11 6 0	R. Michell & Son.
ditto	55	12 1 6	Sims and Co.
ditto	42	10 15 6	Newton, Keates, & Co.
Sold at Aberystwith.			
Goginan	66	£13 16 0	Sims & Co.
ditto	34	13 11 6	Mather and Co.

COPPER ORES.

NO SALE on Thursday last, Dec. 16.

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—Devon Great Consols, Wheal Josiah, Wheal Maria, Wheal Fanny, and Wheal Anna Maria, 1500—Tresavean 331—West Caradon 299—Marke Valley 293—Fowey Consols 276—Wheal Friendship 250—Bedford United Mines 123—West Wheal Jewel 109—Holmbush 86—Wheal Gorland 24—Ting Tang Consols 5.—Total, 3296 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—United Mines 1449—Par Consols 414—South Caradon 377—Creegbraws 217—Treleigh Consols 155—Wheal Comfort 88—West Trethellan 54—Wheal Mary Consols 50—South Tolgus 50—Wheal Brewer 47—United Hills 20—East Downs 19—North Downs 15—Wheal Ruby 13—Wheal Unity Wood 9.—Total, 2977 tons.

COPPER ORES

At SWANSEA, for sale Dec. 23.—Cobre 80, ditto 76, ditto 65, ditto 13, ditto 9, ditto 106, ditto 105, ditto 104, ditto 81, ditto 70, ditto 87, ditto 66.—Cuba 106, ditto 101, ditto 96, ditto 87, ditto 72.—Knockmahon 113, ditto 86, ditto 81, ditto 76, ditto 68.—Burra Burra 95, ditto 72, ditto 62, ditto 51.—Berehaven 117, ditto 94.—Holyford 70, ditto 47, ditto 31.—Kilduanne 81.—Australian 64.—Ballymurtagh 67.—Cosheen 24, ditto 17, ditto 7, ditto 1.—West Dolfrwynog 12, ditto 8, ditto 5, ditto 2.—Vine Slag 22.—Bankart's Cobre 3.—Total quantity of ore for sale, 2700 tons.

Wheal Robins.—A meeting of adventurers was held on the 2d inst., when the following resolutions were passed:—That in the present state of the proceedings in the Stannary Court it would be improper to audit the accounts; and this meeting, therefore, refuses to examine them.—That the deed or grant of the sett, now in Capt. Rule's possession, be forthwith deposited at the East Cornwall, Liskeard.—That it is expedient to continue the further prosecution of the mine under proper management.—That this meeting is of opinion that the interests of the shareholders will be best consulted, by appointing some other person to fill the office of managing agent in the room of Capt. Rule.—That a meeting be held at the Fountain Inn, Liskeard, on the 30th inst., for the purpose of considering the propriety of appointing a managing agent in the room of Capt. Rule.—Capt. Rule protested against anything being taken into consideration, except the notice which had been given by the lords.

Shut End, near Dudley.—In the colliery of James Foster, Esq., as R. Dale was in the act of setting a tree to prop up the stone, a quantity fell upon the poor fellow and crushed him to death.

Victoria Colliery, West Bromwich.—T. Slater was killed by a fall of coal.

Merthyr.—W. James was killed, unfortunately, by a fall of rubbish in one of the mine patches at Hirwain.

NOTICES TO CORRESPONDENTS.

It will at all times save much trouble, and frequently considerable delay, if communications are simply directed—

To the Editor,
Mining Journal Office,
26, Fleet-street, London.

Also, to avoid trouble, Post-Office Orders should always be made payable to William Salmon Mansell, as acting for the proprietors.

*** We should feel obliged to all pursers, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal with as little delay as possible.

Professor Ansted's Lectures.—We regret being compelled to postpone the continuation of this important series of lectures, but which will be resumed in our next.

Adcock's Spray Pump.—Mr. Adcock's further communication is unavoidably postponed until next week.

"T. R." (Leeds).—Early in the next Volume.

Erratum.—In my last week's letter, respecting the Lanreass granite, you have erroneously inserted "Deakin" *for* "Lukin"—please to correct this, and oblige, R. Murchy.

We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses; not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

The Mining Journal is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

Glossary of Mining Terms.

In the month of January next, we intend publishing, as a Supplement, an Entire Glossary of English and Foreign Mining Terms.—Subscribers and others wishing for copies of the Number, had better forward their orders, through their agents, to prevent disappointment: the charge for the Journal and Supplement will be Sixpence.

THE MINING JOURNAL
Railway and Commercial Gazette.

LONDON, DECEMBER 18, 1847.

It is highly gratifying that we are in a position to state, that his Royal Highness Prince Albert has, with a view to advance the mining interests of the county of Cornwall, determined on working the South Towan, United Hills, and Wheal Charles Mines, being parallel lodes. We state this on authority, and are well pleased to find that the attention of the Prince is thus directed to our national and natural resources of wealth.

The vibrations of the commercial earthquake, which recently shook the imperial isle, are daily diminishing in their intensity. We have had another week of repose. It is, in a great measure, by a quiet process of this kind, that the resources and vivacity of commerce will be ultimately restored. At this moment a dew is distilling upon our outstretched trading interests, the fullness and fertility of which will be seen and appreciated in the dawn of the approaching year; the convulsion, through which we have passed, has shaken down some domestic structures, which will require some time and assiduity to rebuild and to repair. Mining, which suffered less by the fermentation than perhaps any other great public interest, has less to look for from the restoration which is in progress. We have, consequently, no change of importance to notice in this branch of our domestic industry. A meeting of the Australian Mining Company has taken place during the week, and, though not in the fullest sense satisfactory to the parties interested, we have every confidence, that when the officers of the company have given that full exploration, which their vast distance from the metropolis may alone have prevented, their conduct will appear irreprovable. We are happy to find that, by the arrival of two sets of mails within the week, the Indian and the American, information of the firmness and stability of our commercial connections in those important districts, has been received—the shock which fell upon us did not propagate itself to them, and, though weakened in some measure at our centre, we are strengthened at the extremities. Looking, in fact, a little in advance of our present circumstances, there will appear to the tolerably experienced eye, far out in the mercantile horizon, those indubitable signs of fair weather and a prosperous course of things, as will satisfy the expectation, and more than satisfy the necessities, of this active and far-reaching people.

There is reason to hope, that the northern coast of the county of Cornwall is about to be further benefitted, by the formation, at St. Ives, of a harbour of refuge. We mentioned some time since, the erection of a lighthouse on Trevose Head, and the importance of giving the fullest publicity to such erections and additions when they are completed. A few hours only after that paragraph had gone to press, a sad calamity took place on a distant part of the coast, principally from the want of a due publication that a light was erected at that particular point, and the omission by the ordinary hydrographers of the situation and bearings of the light, which should have been fully indicated in their charts. Next to the proper lighting of our coasts is the importance of a full description and publication of the situations, bearings, and peculiarities of the lights themselves. The catastrophe, to which we refer, was the loss of the *Stephen Whitney*, with about 100 souls. Lighthouses are a part of our national defences against shipwreck, and so are harbours of refuge; and it is, we believe, quite indisputable that, on many parts of our extensive coasts, the lighting and harbourage really requisite is lamentably insufficient. We may consider Cornwall the most Atlantic county in this island at least—it throws out a double coast into two open seas, and both these seas the most frequented of any that flow between the Poles. To fill this coast, as far as may be possible, with roadsteads and places of refuge for vessels purposely traversing, or by stress of weather driven upon it, is, as it appears to us, one of the most imperative and important of public duties.

We have been now for sometime of opinion, that the Cornwall Railway cannot be proceeded with; and we have for a much longer time, and with a fuller conviction, known that it ought not. This judgment is not founded on circumstances extrinsic or incidental to the work, but upon a consideration of thick coming faults, which stand in indissoluble connection with the primary elements and original conception of the line. We cannot now reopen the question of the merits of the two county lines respectively, except so far as to say that, in our opinion, the Central project has as much before its competitor, in the fullness and utility of its railway capabilities, as the winner of the last sweepstakes is superior to a superannuated roadster. This exceedingly inferior line has had a certain potentate luck, and its own too. It was taken to Parliament under the skirts of the Great Western Company. Beneath the tutelary care of that corporation, it passed the ordeal of the committee. Its qualities as a railway were admirably sworn to; and it sprang forth armed with an Act of Parliament as wonderously as Pallas once sprung from the Thunderer's side. From that day to this, their *Act* has slept much as a dead letter in the pockets of the directors. It has had nearly a two years' hibernation. On awaking, it finds that it has done no work, and has spent its money. The chairman and directors were authorised by their Act of Parliament to raise money in certain directions. Having put their hands into every hencoop which afforded any feathers, they now seek, by a supplimentary bill, to rifle an additional number of dovecotes. For the sake of the shareholders, who can have no rational hope of seeing their money back again, and also for the sake of that interesting mining district, which it will keep at its present inconvenient distance from the metropolis, we hope there will be a failure as to the bill sought, and, of consequence, as to the funds to be raised by it. If it finds success, it will, in all probability, be by the clever jockeying of the Great Western Company, and the kind assistance of its, now not very ponderous, purse. Of that line, the Cornwall Railway is, in the direct and fullest sense of the word, a parasitical branch—it has no independent authority, and no independent funds. From the heaviness of its works, and the singular misdirection of its route, it is impossible that the Cornwall Railway can even do the transit of the district satisfactorily; and we do hope that out of doors no encouragement will be given to it to seek enlarged powers to borrow money—the misapplication and waste of which, a little time will show, as truly as the present circumstances of the line show, the misapplication and waste of the large sums already raised for the prosecution of this uncalled-for and intrusive work.

It is a very serious fact, that, as a nation, we are wholly unprepared for any sudden outbreak of war; we would take weeks, at least, to place ourselves in anything like a formidable position to resist a foreign invasion. Many of our readers will, no doubt, ridicule the idea; but let them reflect for a moment on our present resources, in the case of any sudden emergency, and what we are doing to strengthen our means of defence, and contrast this with the position of, and also with what is going on in, France. We, the greatest commercial and the most extensive nation in the world, with territories and property in nearly every corner of the globe, have, consequently, more to protect than any other country, which compels us to scatter our army and our navy in driblets, wherever our interests exist. And what have we left for internal defence? Comparatively nothing. We have no fortifications to our large and wealthy towns—not even to London; and, if we had them, where are the soldiers, or trained men, at our command? We must recollect that railways and steam-boats have made us virtually part of the continent. We are not so likely to have a naval engagement with our neighbours, else our position would be far more secure. Now, we are no alarmists, but we sincerely think that the public are much too confident in the present resources of the nation; they are entirely engrossed in commerce, and in the amassing of wealth, without for a moment considering, how they are to defend their riches from the attacks of an enemy. We wish to do what we can to rouse those who are in authority to a sense of their duty before it be too late; and we have much satisfaction in observing, that those who are at present entrusted with that department of the Government which properly belongs to this subject are by no means blind to the actual state of things.

Mr. Ward, the secretary to the Admiralty, in his speech, on February 25, 1847, made the following observations:—"England, too, be it remembered, being a country which had no other defences, of which the coast was unprotected, which had a disposable army of but 20,000 men, without a militia, or any military organization whatever; and yet, while we voted, under these circumstances, but 5,996,000*l.* for our naval service, France, by her estimate for the present year, which he had received, a day or two ago, devoted to the same purpose 5,639,000*l.*—making a difference between France and England of only 357,000*l.*, although France had her coasts admirably fortified, with Paris impregnable, a standing army of 300,000 men, and a national guard and a militia to fall back upon, for internal defence. And, at the same time, the House must be aware, that within the last two years, a remarkable change had taken place in the naval establishment of France."

The hon. gentleman then proceeded to remark that, in 1846, the Chamber of Deputies added, on the deliberate report of the Government, an extraordinary credit of 93,000,000 fr. (3,720,000*l.*) to be spread over seven years; and that the Minister of Marine, at the close of his report, said—"It is thought to be in harmony with the manifest intentions of the Chambers, that the building of new ships should be proceeded with as fast as possible, so as to complete the projected increase of the fleet as soon as can be done, without waiting for the term of seven years." The object was, that France should increase the number of her ships from 359, which they were in 1846, to 390, which was what they were intended to be. After remarking on the noble example thus set to us, and admiring the wise liberality with which her great naval works had been carried on from year to year, till she had compensated herself for the natural disadvantages under which she laboured, along the whole coast of the channel, by some of the most magnificent works now in existence, Mr. Ward then said—"Along the whole coast, from north to south, from Dunkirk to Calais, to Havre, Cherbourg, St. Servain, Brest, L'Orient, Indre, Rochefort, and Toulon, works were going on of which that House had but little conception, either as to the actual importance of the works themselves, or of the magnificent steam vessels that were being constructed there. For Cherbourg, 44,000,000 fr. had been appropriated—18,000,000 fr. for the breakwater, and 26,000,000 for the dockyard. The yard contained 231 acres and 16 building slips, and 6000 workmen were employed there; while the breakwater exceeded that at Devonport by one mile. At Brest the steam establishment was on a larger scale than any which England possessed. The smithery contained 127 fires, while that at Portsmouth had only 48; and the same proportions were maintained at the other harbours. These facts, it appeared to him, ought to be a lesson to us. They imposed a very heavy responsibility on those who were in power in this country. It behoved us to take care, by the proper development of our resources in time of peace, to prevent the balance of power being changed in case of war." Now, we may depend upon it, that France is not making all these extraordinary preparations for no purpose; not that we suppose she has at present any immediate object in view; but she is quietly taking every precaution, and strengthening her resources for defensive and offensive measures, and thereby every day rendering herself more impregnable, and more able to prove an annoyance to her neighbours.

We are far from being alone in taking such a view of this matter. Besides others of our contemporaries, the *Times*—the leading Journal—thus writes in an article some months ago:—"The time is coming when we must have a strong defensive equipment at home. There is no blinking the matter. At present we have none. We are literally defenceless against such an invasion as might—not, indeed, reduce England or lay London in ashes, but might give a greater shock to our security, and inflict a deeper wound on our independence in a few hours than centuries could afterwards repair. Once let a hostile force—even a small hostile force—land in England; and, with the *prestige* of our inviolability, we should quickly lose much that gave us dignity as a free, and all that gave us confidence as a wealthy, people. The contingency may be remote; but it is not impossible." We must recollect that the continent is essentially military in every sense of the term, as the same journal forcibly remarks—"The people are military. Their education is military—their habits are military—their public spirit is military—their ambition is military. They believe in commerce as a means of wealth; but they no less believe that its foundations are laid in conquest. They acknowledge the commercial energies of Great Britain; but they are persuaded that these are stimulated by successful encroachment and continued aggrandisement. What they believe, that they wish to realise." And again—"But let an accident of diplomacy, or of opportunity, combine against us Governments, now divided against each other—let us once find ourselves in hostility to the two great military, and the one great naval, power of the world—our army distributed in petty driblets in every quarter of the globe, from Canada to Ceylon, from Calcutta to the Cape, it demands not the gift of the prophet to foretell how we should resist a sudden invasion, with a few half-manned ships at Portsmouth, or 16 impotent guns at Woolwich. To guard against an event remote, indeed, but still terrible, is the duty of every Minister; and one of the most obvious means of doing this, is to multiply the numbers of our defensive force at home—so that the most sudden attack may not precipitate us into that ignoble panic, which so often neutralises the undisciplined efforts of the brave, and the ignorant preparations of the many." All these are truths, which are so obvious that they require no further comment, and, we think, cannot fail to awaken those who are at present dreaming in a fancied confidence, to the real dangers to which we may become exposed, if we do not take active steps in proper time. We may again recur to this important subject, and, in the meantime, we would refer our readers to Mr. Weale's "Letter to Lord John Russell, on the Defence of the Country," &c., which was published a short time ago, and in which they will find it very ably and forcibly treated, together with a plan which he proposes for enabling us to have always a sufficiently-numerous and a well-trained force at our disposal for internal defence.

Since writing the above, we have observed the following in the report of the proceedings of the House of Commons, on Thursday evening:—

Viscount Ingestre said, that, having seen a letter in the newspapers, which had excited considerable interest, relating to the defences of the country, which purported to have been written by the Commander-in-Chief to a high and distinguished officer, and in which it was said that his grace had made many declarations of his opinions on the subject of the national defences to two or three Governments, he begged to ask the First Lord of the Treasury, whether his Government had received any communication from the Commander-in-Chief on the subject?

Lord J. Russell said—I am entirely ignorant of the correspondence in the newspapers to which the noble lord has alluded; but, with respect to any communication I may have had with the Duke of Wellington on the subject of the national defences, I beg to inform the noble lord that, soon after I came into office, I wrote to the noble duke on the subject; and that, since that time, I have been in frequent correspondence with the illustrious duke on the subject.

We understand that the letter alluded to has been attracting considerable attention; but whether the expressions therein, attributed to his grace, are really authentic or not, it is very generally and confidently believed, that the illustrious duke entertains very strong opinions on the subject.

THE NEW WATERLOO COLLIERY.

Vice-Chancellor's Court, before Sir J. K. Bruce, Dec. 15.

Phelps *v.* Prothero.—This was a motion for an injunction to restrain the defendant from proceeding with an action at law which he had brought against the plaintiff under the following circumstances:—The defendant had, by lease dated the 20th of February, 1840, demised to the plaintiff a colliery called the New Waterloo Colliery, together with the level, incline plane, tram-plates, machinery, and fixtures thereon, for a term of six years. In August, 1844, upon the compromise of an action which had been brought for galeages under the lease, an agreement was made by Mr. Cartwright, on the plaintiff's behalf, and the defendant, whereby, as the plaintiff contended, he was released from the payment of any further rent under the lease. The agreement was as follows:

In consideration of your withdrawing the record in this action, I hereby undertake to pay you to-morrow morning the sum of 210*l.*, by a check on my bankers, in addition to the sum of 300*l.* for which the defendant has given his bills at one, two, and three years' date, you hereby undertaking to discharge the defendant from all further liability to the rents and covenants of the lease, which is the subject of this action, upon his assigning to you all his estate and interest in such lease.

To Thomas Prothero, Esq. W. S. Cartwright.

I accept of the within-mentioned terms of settlement, and undertake to perform my part of the within arrangement. Thomas Prothero.

At the time this agreement was entered into the lease was in mortgage, and, as the bill alleged, and the answer admitted, this fact was then known to the defendant. The bill charged, that after the execution of that agreement the defendant took possession of the colliery by taking up and removing all the tram-plates in the level and on the incline, and all the machinery and fixtures at the colliery. The defendant, by his answer, denied the possession or removal of any tram-plates, except a few loose ones, which were valueless, and asserted that all the tram-plates in the level were removed by the plaintiff. Upon the coming in of the answer, a similar motion to the present was made for an injunction, which was refused, except upon the terms of bringing the money into court. The defendant then moved for leave to file a supplemental answer, which was granted upon payment of the costs, and the plaintiff had liberty to renew his motion for the injunction on the merits confessed in the supplemental answer. By the supplemental answer the defendant admitted that he had taken up and removed about 350 yards of the tram-road in the level, and also the plate of the weighing machine, and the chain by means whereof the incline was worked, in the month of September, 1844, but still insisted that he had not taken possession of the colliery. The action sought to be restrained was brought to recover seven quarters' rent, which accrued between the making of the agreement in August, 1844, and the expiration of the lease in March, 1846, and the plaintiff at law had obtained a verdict and judgment for a sum exceeding 2300*l.*

Mr. Swanston and Mr. Roxburgh, in support of the motion, contended, that according to the true construction of the agreement, the defendant had no right to require the lease to be given up, knowing, as he did, at the time he made the agreement that it was in mortgage, and could not be so given up; that all his subsequent acts were consistent with that construction, and inconsistent with any other; and that, by the removal of the tram-plates and the machinery at the colliery, he had done all that it was practicable for him to do in order to take possession of the colliery, and that the acts done by him did constitute at law an effectual taking possession by him. That the plaintiff had, by his diligence in prosecution of the suit, placed himself in a position, by examining his witnesses, to have the cause heard as soon as the defendant pleased, all the plaintiff required being protection against execution until the cause could be heard on the merits. Under these circumstances, they submitted that it would be contrary to equity and good conscience to refuse the injunction.

Mr. Russell and Mr. Whitbread, in opposition to the motion, contended, that the supplemental answer introduced no new feature into the case—that it stood precisely on the same merits as when the court refused the injunction, except upon terms. All that the supplemental answer did was to increase the quantity of plates removed, but did not vary the legal effect of such removal, and that, consequently, this motion ought to be refused as the former was, except upon the terms of bringing the money into court.

His Honour.—Let me have a copy of the bill and answers, and I will read them before I give my judgment. Solicitors for the plaintiff, Messrs. à Becket, Son, and Sympson; solicitor for the defendant, Mr. G. Hall.

THE RAILWAY INTEREST.

As a sequel to the list of railway calls made during the present year, which we published in the Journal of the 4th inst., we now present a statement of the dividends paid on railway shares during the three quarters of the year, ending in September last. From our table of the calls it appears that the total amount of capital, called up during the 12 months, ending with the 31st inst., is rather more than 42,000,000*l.*; and from the annexed table it will be seen that the amount of dividends payable by the several companies during the year is about 8,000,000*l.*, or say one-sixth of the amount of the calls; the amount of dividends for the nine months which we quote, being nearly 6,000,000*l.*, and the dividends of the present quarter being about 2,000,000*l.*

The following are the amounts of dividends paid by the several railway companies in each of the months undermentioned, distinguishing the dividends paid on English lines from those on Foreign lines:—

1847.	*British Lines.*	*Foreign Lines.*	*Total.*
Dividends paid in January	£115,000	£93,000	£208,000
" " February	1,373,000	83,000	1,456,000
" " March	977,000	28,000	1,005,000
" " April	259,000	116,000	375,000
" " May	59,000	12,000	71,000
" " June	10,000	5,000	15,000
" " July	290,000	90,000	380,000
" " August	1,395,000	64,000	1,459,050
" " September	954,000	56,000	1,010,000
Totals	£5,432,000	£547,000	£5,979,000

This table presents many features of interest: it will enable us to form some idea of the capital embarked in railways, and it affords the data for judging of the comparative value of the investments. Some of the companies pay dividends of 10 per cent.—more of 8 per cent.; but, if we average the dividends as low as 5 per cent. per annum for the whole, it shows that there are upwards of 120,000,000*l.* represented by railway stock. This estimate is under, rather than over, that afforded by the data before us, and allowance is made for the amount of dividends paid, as interest on shares, in companies which are not yet earning an income. There are other points of interest connected with this table, to which we may probably refer hereafter. The fact, that one-sixth of the calls—which have been so severely felt during the past few months—have been supplied by the companies themselves from the actual earnings of the several lines, proves that, if railway expenditure is brought within moderate limits, it can be provided for without interfering with the legitimate demands of the trade and commerce of the country for monetary accommodation.

Railway Patents in France.—The following is a statement of the number of patents (original and improvements) for inventions connected with railway construction, which have been obtained in France:—In 1843, 19; in 1844, 22; in 1845, 88; in 1846, 131—total, 260. Of these not above three or four have been carried out so as to realise any advantages to the inventors, and these are of English origin—one of which is that of Mr. Stephenson, who receives a premium of 50*l.* for each machine adopting his patent improvement.

Railway Bills Suspended under the Order of Last Session.—A return has been presented to Parliament of the bills which have been suspended, with a view to the privileges in the present, secured under the order passed last session. The amounts of capital stock proposed to be raised, and money to be borrowed under each bill, are stated in the return. The bills (in number 13) are the following:—1. Airdrie and Bathgate Junction (amendment and deviation). No power was to be taken under this bill to raise capital or borrow.—2. Eastern Counties (Cambridge to Royston and Ware); capital, 700,000*l.*; loan, 233,000*l.*—3. Leeds, Dewsbury, and Manchester (Ossett branch, and Dewsbury and Morley stations); capital, 115,000*l.*; loan, 38,300*l.*—4. London and Blackwall (improvements and branches to St. Katherine and London Docks); capital, 100,000*l.*; loan, 33,000*l.*—5. Manchester, Sheffield, and Lincolnshire (Sheffield Canal purchase); capital, *nil.*; loan, 25,500*l.*—6. Do. (station approach in Manchester); capital, 50,000*l.*; loan, 16,666*l.*—7. Do. (junction with the Midland, *via* Barnsley, and branches); capital, 348,000*l.*; loan, 116,000*l.*—8. Scottish Midland Junction (amendment and branch to Lawrencekirk); capital, 300,000*l.*; loan, 100,000*l.*—9. Strathlay and Brandalbane Extension; capital, 150,000*l.*; loan, 50,000*l.*—10. South Eastern (Mid Kent and Direct Tonbridge); capital, 900,000*l.*; loan, 300,000*l.*—11. Do. (North Kent); capital, 966,000*l.*; loan, *nil.*—12. Do. (Strood to Maidstone); capital, 275,000*l.*; loan, 91,600*l.*—13. Midland (Gloucester and Stonehouse Junction); capital, 110,000*l.*; loan, one-third.

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

Your readers will not have forgotten that, in the course of the last session of the Chambers, the Government presented a bill for allowing the introduction, *free of duty, of iron, copper, zinc,* and several other articles destined for ship building. This bill was, according to the French custom, referred to a Committee of the Deputies, for a report. After months of labour, or rather months of delay, the Committee presented its report, but only just the day before the Chambers were prorogued. As the *Mining Journal* stated at the time, this was done to gain another year's delay, in order to oblige the ironmasters, who, with their usual modesty and disinterestedness, chose to think that the admission of iron, duty free, even for ship building, would be an encroachment on their interests. The report, however, though presented on the 24th July to the Chamber of Deputies, has only just been printed—another scandalous delay.

This precious document is just what I expected—a furious declamation against even the pitiful concessions which the timid Minister of Commerce thought he could not refrain from asking the ironmasters to submit to, in order to afford a chance of saving the mercantile navy from the total annihilation with which it is threatened. What else, in fact, could be expected from a packed committee, formed of avowed monopolists, and even of the ironmasters themselves, or their recognised adherents? If the Government had been sincere in its professed desire to carry the insignificant reforms which it had proposed, it would never have allowed its bill to be referred to such a committee, which everybody predicted would, first of all, create the greatest possible delay, and, next, try to strangle the measure. But the truth is, that the present Cabinet was, and is, and ever will be, under the control of the monopolists of iron, coal, calico, cloth, &c., who squeeze millions from the people; and I verily believe that, in proposing its paltry schemes for the relief of the mercantile navy in particular, and the public in general, it desired nothing so much as to see them rejected—its only object in presenting them being to silence the public clamour, which was created by seeing the deplorable position to which monopolies, and especially that on iron, had reduced the navy, and the whole nation.

M. Lanyer, the deputy of St. Etienne, and a great coal man, has had the honour, or rather *dis*honour, of drawing-up this precious report. He devotes special chapters to the modifications which were proposed on iron, copper, zinc, &c., and concludes by arriving at this notable result:—"The difference which would arise from the measure presented by the Government to the shipbuilders, would not be upwards of 24,000*l.* per annum, as represented in the *exposé des motifs* of the Government, but only about 12,000*l.*; and even that sum would not be really gained—for the adoption of the measure, relative to copper alone, would deprive the mercantile navy of as much as it is pretended to make it economise. Thus, the navy would be deprived of the conveyance of copper from Chili and the ores of Peru, which gave rise, in 1846, in the single port of Bordeaux, to a large importation." ("Large," M. Lanyer? Why, if you will take the trouble of looking at the official returns, you will see that the imports of copper from Chili, in 1846, were only about 600 tons!) "Thus (says the report) the propositions which we have just examined, are both insignificant and dangerous. [How, by the way, in heaven's name, *can* a measure which is insignificant be dangerous?] It is from the whole of the considerations we have expressed, and from information carefully collected, that your committee proposes to you *to reject* the propositions of the Government."

Reject them? It is all very fine to talk of rejection; but what will become of your mercantile navy? You know as well as any one that it has been on the decline for years; and that several chambers of commerce of the principal sea-ports have firmly declared, that the only measure which can rescue it from total annihilation, is, to allow it to import iron, copper, and zinc, free of duty. If, however, you choose to see it destroyed, that is your affair; but it seems a strange sort of patriotism to deprive your country of a nursery of seamen, which a mercantile navy is—to deprive it of the only chance you have of offering a brief resistance to England—that nation which you consider your deadliest rival. Well, be it so; the consequence of your mistaken proceeding, will certainly be to deprive England of the opportunity of selling you a few tons of iron and copper per annum; but, *en revanche*, they will have less trouble in thrashing you when the day of battle comes.

On some future occasion, it may be worth while, if no more important matters be stirring, to enter into an examination of the different chapters of this famous report, which have any bearing on the mining interest. Though full of false statements and erroneous conclusions, they may merit some attention as the pleading of the ironmasters in favour of their monopoly. They are also not without value, on account of the dread which they express at the coal interest being likely to be more encroached on than it has hitherto been by that of England and Belgium.

The newspapers mention, that the Austrian Government has upwards of 5,000,000*l.* sterling in its coffers over and above the current expenses for which it has to provide—all of which, it appears, has arisen from the advantageous working of the copper mines which it has retained in its hands.

On the 24th, the Post-office will receive a new contract for the supply of several hundred tons of English, French, or Belgian coal, of the same quality as that of Cardiff.

"*St. Dizier, December* 9.—Cast-iron is demanded by the south, and by Paris. For a long time past, no transactions have taken place, and nothing has yet been settled with respect to the new demands, which are important, the question of price being under discussion. A lot of *fonte grise* has been sold at 172 fr. The *fers laminés* are quoted at 350 fr. for the province, and at 330 fr. for Paris. The transactions in cast metal, which are in course of negotiation, will, it is supposed, have some influence on the price of iron."

The Strasbourg people are talking of raising capital for forming a canal to enable the coal of the Sarrebruck basin of Prussia to be brought to the Rhenish departments of France, to that of Moselle, and even to the great iron-works of the Haute Marne. The coal basin of Sarrebruck will also, as already mentioned, be put in direct communication with the Haute Marne by means of the railways now in course of formation. The consumption of coal in the two Departments du Rhin, and in the Moselle, is already very considerable, and is represented to be increasing every day in a very remarkable manner. Moselle already draws the greater part of its supplies from Sarrebruck; but it is only within the last year or two that the Rhine Departments have taken its coal. Here there is a new opposition threatened to the native coal basins, and the result of it will, no doubt, be most injurious to them. But it will be in the Haute Marne that the introduction will tell most against the French basins, for it will assuredly deprive them of that *debouche*. The loss at this moment, it is true, would not appear of very great importance; for, notwithstanding that department is the principal iron district of all France, it consumes comparatively little coal, owing to its great distance from all the French pits. When, however, it shall be able to procure coal at a reasonable rate, its consumption will undoubtedly become one of the greatest—if not the greatest—of all France. And the French pit-owners will have the mortification of seeing foreigners supply that consumption. It is, however, their own fault; for, as some of your readers may happen to remember, about two years ago, the Government proposed to form a railway, at its own expense, from St. Dizier to Gray, to enable the iron-works to supply themselves with coal, the only condition laid down being, that a company should be created to carry on the railway. But the coal-pit people had not the courage to put their hands in their pockets to make a temporary sacrifice for a permanent interest; and the iron-works even refused to help them, lest, probably, the public should have insisted on their selling cheaper iron, in return for cheaper coal.—*Paris, Wednesday.*

BELGIUM.—Nothing has yet been done for the coal districts of Mons. The embarrassment of the greater part of the proprietors of mines is, consequently, most intense, and some of them have even suspended the workings of their pits. Several of the journals, both of the capital and the provinces, are very earnest in their recommendations to the Government to, as the phrase is, "do something;" but the Government continues to dread that, if it "does something" for Mons, it will have Liege, and Antwerp, and Ghent, and all the great commercial centres, on its back, urging it to "do something" for them too. It seems, however, to be generally admitted, that the proprietors of coal-pits have really a stronger claim to assistance, than any other branch of industry—for not only are they suffering more cruelly than any other, but they enable the vast population of a large district to live, and, in fact, are of vast importance to the whole country. What is required, seems to be only some such measure as that which was adopted to stay the crisis of England—to afford the facility of obtaining discounts. The proprietors of the coal-pits of the Mons district are generally considered men of sound substance; and those who are most earnest in pressing the Government for relief, take care to state, that they are not insolvent, but in want of money. "We have," they say, "shares, stocks, bills of exchange, and property of all descriptions, but we cannot turn them into specie, and without specie we cannot go on." It is much to be regretted, that the Government has not come to some formal decision before this. Everybody will admit, that a Government ought not to meddle with commercial matters on slight grounds; but it ought, at least, to be able to say, at any time, and to anybody who inquires, whether it means to interfere or not. Irresolution is always blameable, and in such critical circumstances as the present it may be disastrous. If anything is to be done, let it be done at once, before the evil becomes of greater gravity; if nothing is to be done, let the fact be announced at once, in order that the Mons people may seek elsewhere for relief.

The direction of the Company Valentine Coq advertises, that it will pay what it calls the second portion—*terme* is its phrase—of the dividend for 1846, which, it says, has been fixed at 5½ fr. per share. The money is to be paid, from 1st January next, either at the works in Belgium, or at the company's offices in Paris.

A meeting of the shareholders of the Gougnies Iron-Works is called for February. The Company of the St. Leonard Works announces, that it will pay its dividend on and after 1st January.—*Brussels, Tuesday.*

ZINCING IRON BY GALVANIC ACTION.

The so-called "galvanised iron," which has now long been in use all over Europe, is nothing more than iron articles, dipped in a bath of zinc. At the Brussels Academy of Sciences, M. Louget lately made a communication relative to some experiments on *really* coating iron with zinc by galvanic electricity. He employed the chareoal battery of Bunsen with four plates, which had been previously at work for 40 hours, so as thoroughly to imbue the charcoal, after which the acids were renewed. The charcoal was immersed in weak sulphuric acid, composed of 33 parts of concentrated acid and 100 of water; the battery having been at work one more hour previous to commencing the experiments, its action measured by the voltameter gave, as nearly as possible, constant results during four experiments. Four square pieces of iron were employed, having each a square surface of 21 feet; each plate was polished, and then rubbed with pumice-stone, after which care was taken not to touch them with the naked hands. The positive pole of the battery was terminated by a plate of zinc, of a surface double that of the iron plates, bent back in the middle, and placed in a porcelain trough; the iron sheet to be zinced was connected with the negative pole, and introduced between the folds of the sheet of zinc. All contact between the poles was prevented by a plate of glass. A slightly acidulated saturated solution of sulphate of zinc was placed in the porcelain trough, and the saturation of the solution kept up during the process. In experiments Nos. 1 and 2 the plates were perfectly smooth, No. 3 had not been well rubbed, and No. 4 was rough from previous rust—they remained 20 minutes in the solution. On examining them by weight, the following were the results:—

Experiments.	Weight before zincing.	Weight after zincing.	Zinc taken up.
1	312·708 grammes*	314·886 grammes	2·178 grammes
2	278·918 „	279·857 „	·939 „
3	114·690 „	114·712 „	·022 „
4	238·511 „	238·568 „	·057 „

Here the heaviest plates absorb the most zinc, while, in former experiments, the contrary took place—in fact, there appears to be no general law; but the zinc is deposited on the plates in totally different ratios in different experiments. After these experiments the battery was renewed, M. Louget proceeded to operate on the already zinced plates, and the following were the results:—

Experiments.	Weight before zincing.	Weight after zincing.	Zinc taken up.
1	314·886 grammes	314·937 grammes	·051 grammes.
2	279·857 „	279·910 „	·053 „
3	114·712 „	114·880 „	·168 „
4	238·568 „	238·619 „	·051 „

In these experiments Nos. 1, 2, and 4 have increased in about equal proportions, but No. 3 had received as much zinc as the other three combined, and hence it appears that the size of the objects to be zinced exercises no appreciable influence in the quantity of metal reduced. In a further experiment with a piece of a gun barrel weighing 95,770 grammes, and a piece of iron plate 41,032 grammes, in the first deposit the former took up ·122 grains of zinc; in the second, 1·333 grains—total, 1·455 grains; the latter took up ·136 grains in the first, and only ·037 in the second—together ·173 grammes: these results are remarkable. These experiments prove that there is a great difference between the galvanic reduction of the less oxidisable, and consequently easily reducible, metals, as gold and silver, and those metals which, like zinc, iron, cobalt, and nickel, are electro-positive, and more easily oxidisable.

* One pound troy contains 373½ grammes.

BRISTOL AND EXETER RAILWAY.

We understand, that the Bristol and Exeter Railway Company have agreed to purchase the Glastonbury Canal and Highbridge Harbour, which we think, there is good reason to believe, will be a most judicious and important addition, as we are informed, that, by expending a comparatively trifling amount, this harbour may be made the most commodious and convenient in the west of England, not excepting Bristol, as vessels of 500 or 600 tons may be brought up close to the rail, and deliver their cargoes direct upon it. The port, it may be perceived, is most admirably situated for the Irish and South Wales communication; and, as steam-boats, for Swansea, and other parts of South Wales, as well as for Ireland, will be able to land at *all states of the tide*, it is reasonable to conclude, that at no distant period, a very considerable increase of passengers, for the east and west of England, will result, independent of extensive shipments of coal, butter, iron, and other produce, from Wales, from Ireland, and from foreign parts, for supplying the demand for such produce in the east and west of England; and, although it is probable that the line will be somewhat affected by the construction of the Salisbury and Exeter Railway, yet we think, taking the foregoing into consideration, together with the fact, that it is scarcely possible that it can be deprived, by any competition, of the north of England, South Wales, and Irish trade, and the construction of the several branches contemplated, will render the Bristol and Exeter Railway one of the best and most important lines in the kingdom.

THORNEYCROFT'S ANTI-LAMINATING RAIL.

Two of the directors of the Oxford, Worcester, and Wolverhampton Railway Company, have been to the Paddington station, accompanied by Mr. Thorneycroft, to examine the anti-laminating railway bars, invented by that gentleman, and laid down upon that station for trial, which we noticed, and gave a description of, in our Journal of 12th June last. We have had an interview with the two directors above alluded to, from whom we learn the following particulars, which we gladly lay before the railway public:—On their arrival at the Paddington station, they were introduced to Mr. Gibson, one of the company's agents, who, being informed what was the object of their visit, in the most polite manner accompanied them to that part of the station where the rails were laid down, and ordered the workmen to sweep the surface of the rails clear from sand and dirt, so that they might be able minutely to inspect them upon the wearing surface, which they did very closely, from end to end, and they could not find the slightest appearance of defect in any one rail—they all seemed just as sound and perfect as they did the first week they were laid down. These rails have some of them been down upwards of five months, and in a situation where the wear and tear is so great, that many of the ordinary make of rails have gone all to pieces in much less time. Now, when we consider the ragged state of the rails upon many of our lines of railway, particularly at, and near, the stations, which must be very destructive to the tires upon the carriage wheels, as well as dangerous to the passengers, because we have heard that accidents have happened from the splitting and laminature of rails, attended with the loss of life—we, therefore, hope the engineers and directors of railway companies will give their attention to this subject, which appears to be for the interest of the companies themselves, as well as the safety of the public. It was well observed, by one of the gentlemen, that, if the heavy engines and trains of the broad gauge, with their great speed, and just at the point of stopping the trains, make no impression upon them, no one else need fear the result; for, if Mr. Brunel's heavy engines and trains cannot make them give way, it is of little use in others trying.

ON THE COMPARATIVE LONGEVITY OF CORNISH MINERS.

At the late meeting of the Royal Cornwall Polytechnic Society, Mr. Blee, of Redruth, read a paper, of which the following is an abstract:—Seven years having elapsed since he last troubled the society with any remarks on the longivity of our mining population, he had thought it might serve the purposes of humanity, to ascertain how far what has since transpired would bear out the distressing conclusions to which all the information on the subject at that time available of necessity led. With this view, he had carefully examined 14 volumes of the new register, from the commencement of the system in June, 1837; 4 for Gwennap and Stithians, 4 for Camborne, 3 for Illogan, and 3 for Redruth. Of the 7000 persons registered in the 14 volumes, 3600 were males, and of these 2305 are described as miners, and 1295 as persons of other occupations. He regretted that the occupations of the persons registered, and the causes of death, were often so inexplicitly given; he had repeatedly to get his information of the nature of accidents from other sources. He also stated other circumstances that should be more minutely given. It might occasion a little more trouble, but the advantage would be so important that it would be almost worth while for the society to offer a premium to the mining district registrar whose register exhibited the closest attention to the subject. The first table he now laid before the society contained an analysis of the 3600 male deaths which he found recorded, distinguishing different periods of age, and the occupations, and causes of death. He wished that gentlemen in different localities of the county would take the trouble to compile such tables, and contribute them to one common depository, where they might be preserved for the general purposes of vital statistics. In framing the remaining tables, he had omitted nearly all who had died before the age of ten years, as that is usually the earliest age at which children work underground. But, as the proportion of miner's children, 20·1 per cent., appears much greater than those of persons of other occupations, he could not avoid the inference, that susceptibility of pulmonary disease is transmitted from the parent to the offspring. The first table exhibits the numbers of males who have died from diseases of the chest, and accidental injuries. In comparing these results with those previously arrived at, a curious coincidence is manifest. In his valuable and well-known paper on the statistics of the copper mines of Cornwall, Sir Charles Lemon has given a table showing the number of male accidental deaths occurring in given periods in the parishes of Redruth, Illogan, and Gwennap. Those numbers were gathered from memoranda, inserted in the margins of their registers, by the Revs. H. Molesworth St. Aubyn, G. Treweeke, and J. Marsh; and the annual ratio of accidental deaths for the period they embrace was for Redruth about 2·2; for Illogan, 4; and for Gwennap, 11·2; while during the period of the writer's tables the annual ratio was as nearly as possible the same—viz., for Redruth, 2; for Illogan, 4·4; and for Gwennap, 11·4. The general per centage of fatal mine accidents, as compared with the total number of miner's deaths, he had found, for the periods he had examined, to be 14·1 per cent. In his table of 1841 it was shown to have then been 17 per cent. Since then the per centage of violent deaths has decreased one-half in Illogan, while in Camborne it has increased one-half, and in Gwennap has risen from 16 to 19 per cent. The proportion of miners dying of diseases of the chest, as compared with others, has been 61 to 36 per cent. He asked them to consider these results, and let them stimulate the society to increasing efforts for the improvement of the poor miners' condition. Think of the fact, that nearly 20 per cent. of Gwennap miners incur a violent death; and, if motives of humanity had no influence, he would appeal to their personal interests, and to the burthens which the loss of life or limb, the premature bereavement of the widow and the orphan, are constantly bringing on society. About one in every million railway travellers has been stated to be killed by railway accidents, and the country rings with demands for inquiry and prevention; while, of the miners working in a single parish of this county, 19 in every 100 die a violent death; and, in a single Cornish Union, more than 200 such deaths have been recorded. He implored the society to continue and increase its benevolent exertions to improve the sanitary condition of the miners, and to protect their lives.

Some conversation took place on the startling number of accidents occurring among the mining population, as stated by Mr. Blee. In reply to a question, he said the greater number of accidents had resulted from the falling of stones in shafts, and from premature or too tardy explosions.

The President remarked, that this statement by Mr. Blee would, indeed, be a very melancholy one had he not accompanied it with a few observations, showing that a great many of the accidents had proceeded from causes that may be obviated. There were now contrivances in operation, which, he hoped, would be extended over the county, and be the means of reducing these accidents—he alluded to the main engines at Tresavean, and the United Mines. At the conclusion of the present year of the Polytechnic Society, it was his intention to offer a premium to any person who would give the best statistical account, vital and commercial, of the results of those two engines; and he hoped that, at the next meeting, some very important communications would be made upon the subject. There had been several expedients suggested, with the view of obviating the very great danger of the miners' occupation. One was Mr. Fox's wedge, which, in respect to quarries, had been applied very beneficially; but he did not know to what extent it had been used in mines.

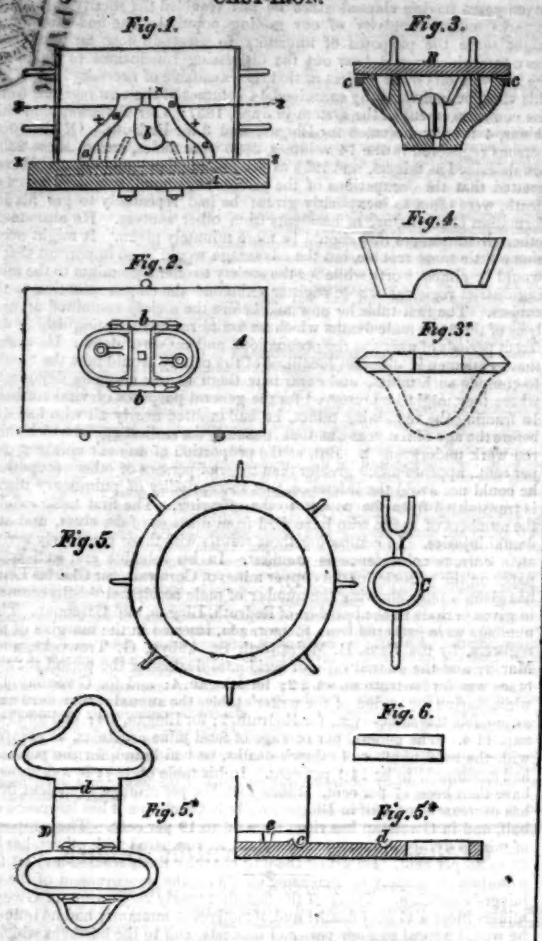
EMIGRATION OF MINERS TO AUSTRALIA.

A very important meeting of noblemen, Members of Parliament, and other gentlemen, was held on Saturday last, at the residence of Mr. Lennox Boyd, Waterloo-place, in order to promote some large and comprehensive plan of emigration from Ireland to Australia—the colonies of which are, at the present moment, nearly at a stand still for want of labour; while the immense increase of the flocks and herds of the settlers, it was stated, had been so great, that there was now actually as much beef and mutton boiled down for tallow (the only means of getting rid of it), as would maintain the whole surplus population of Ireland and the Highlands, now suffering the extremities of poverty and distress. Great complaints were made by the chairman (the Hon. F. Scott), and the other speakers, of the apathetic inertness of the authorities at the Colonial Office with respect to emigration, and of the absurd and injurious tendency of many of their regulations. As an instance, Mr. Jacob Montefiore said, it was well known, that there were splendid copper mines in the neighbourhood of Sydney, New South Wales; and, within the last few months, he had received a letter from a friend in that colony, impressing upon him the necessity of sending out miners, to work the copper to the best advantage. On the receipt of that letter, he applied to his agent, in Cornwall, who, in a short time, replied, that he had sought out, and obtained, 20 or 30 miners, who, being unable to earn an adequate support here, were ready to go, with their families, to Sydney, and were anxious to start immediately. Everything accordingly was prepared for these people to start by the Government emigrant vessel for Sydney, which called at Plymouth; but, on application to the Emigration Commissioners, they said they regretted they could not take out miners to that port, as, in their instructions, only labourers, shoemakers, tailors, and similar trades, were mentioned, and not miners. Thus, by a technical objection, the poor miners had no means of getting out to Australia, where they were assured of earning 60*l.* or 70*l.* a year, and where there was a perfect *plethora*, not only of meat, but of wheat of the very best description. It was agreed, at the close of the meeting, to form a large and influential committee, to enforce these grievances and considerations upon the attention of the colonial authorities.

IMPROVEMENTS IN CARRIAGE WHEELS.—The *Eureka*, an interesting and useful little periodical, devoted to practical science, published at New York, U.S., gives an account of a simple and ingenious improvement in wheels for carriages, such as are formed with iron spokes, similar to those known in this country as Jones's patent wheels; the inner ends of such spokes being inserted in and around the periphery of the nave of the wheel, and the outer ends fixed to its felloe. This nave is divided vertically into two parts, and on the extremity of the axle, that passes through the centre, of it, a screw is cut, which projects beyond the outer portion of the nave, and receives a screw-nut; by tightening this, the spokes are made to approach each other; or, by a reverse movement, to recede from each other, which necessarily causes the spokes to thrust with greater, or lesser, force against the felloe; and thus the expansion, or contraction, of the felloe caused by its exposure to varying temperatures, may be compensated for

IMPOSITION ON RAILWAY COMPANIES.—The following is an extract from the examination before the Metropolitan Sanitary Commission of Capt. W. Yolland, R.E., which may be instructive to railway shareholders:—"At what rate have railway engineers and surveyors obtained copies of your plans?—Copies of plans, drawn upon the 6-inch scale, have been supplied at the rate of 10*s.* per mile. What have they charged to the companies?—We have memoranda in our office, stating that the charges made to companies have varied from 30*l.* to 80*l.* a mile." We shall soon begin to doubt the truth of the old adage, that "there is honour among thieves."

IMPROVEMENTS IN MOULDING AND MANUFACTURING CAST-IRON.



[Specification of patent granted to Wm. Darling, of Glasgow, for improvements in moulding, and in the manufacture of certain articles of cast-iron.—Patent dated June 10, 1847.]

This invention consists—firstly, in the means employed for producing railway chairs in moulds of cast-iron, or other suitable material; and, secondly, in the mechanical combinations, or apparatus, employed, for facilitating the production of railway chairs; thirdly, the annealing of railway chairs; and, fourthly, the application of metal direct from the smelting furnace, for casting in moulds of metal, or other suitable material. Drawings, illustrative of the means by which the same may be carried into practical effect, are annexed to this specification, by which, in conjunction with the following description, it may be readily understood. The *modus operandi* is as follows:—To form a metal mould, or matrix, the operator proceeds as follows:—He places upon a plate, A, a pattern, of the form denoted by the lines, × ×, at *fig.* 1 of the engraving, such pattern occupying the same position as that of the matrix, when finished. He then places the lower half of an ordinary moulding, or sand-box, upon the plate, A, and rams in sand between the lines, * *, and afterwards covering with burnt sand, in the usual manner practised in moulding. Upon this he places the upper half of the moulding-box, and rams in with sand as before; he then places thereon a moulding board, and inverting, or turning, the moulding boxes upside down, withdraws the pattern therefrom, leaving a perfect impression of it in the sand. He then places in this space a pattern chair of metal, of the shape shown at *fig.* 2, which is kept in its proper relative positions with the moulding box by steadying pins, or other known means, for effecting the same; a pouring gate being formed in the sand in the usual manner, the pattern chair being slightly coated with black-lead, and heated, as usual, with metal patterns; the melted metal being then run in, fills the space denoted by *a a*; and when the metal is well set, the metal pattern being withdrawn, will leave a mould, or matrix, of the required form, which has a strap of iron, *c*, passed round it to strengthen it. It will be seen, upon referring to *fig.* 2, that there are projections, *b b*, formed at each side of the metal patterns, which serve as cores—so that, when melted metal is poured into the metal mould, or matrix, it will leave openings at each side to receive a core, to form the interior surface of the chair, or that part destined to receive the rail, the said core being composed of two, or more, wedge-shaped pieces, shown at *fig.* 3—such pieces being retained in their proper position by two pieces, of the shape exhibited at *fig.* 4, being placed in similar recesses in the plate, A, which support each end of the wedges; the metal mould being kept with its small end downwards, the upper or larger end is covered by a plate, B, to which is affixed handles for lifting it by.

The openings in the chair, for the reception of the spikes for fixing it to the sleepers of the railway, may be formed by projecting studs, or cores, upon the metal pattern. The mould is now ready to receive the melted metal, which is poured in through the gate, shown by the dotted lines at *fig.* 3*; and, in order to facilitate the casting of railway chairs, it is proposed to employ a turn-table, or flat ring, or plate of metal (*fig.* 5), mounted and moving in a circular direction upon rollers; and he suggests that it should be of such size as to receive about 30 metal moulds. This plate is furnished with handles for bringing each mould opposite to the ladle, C. The patentee proceeds to state, that having run the melted metal into the mould, and when it is well set, he removes the lid or cover, and employs the following means for removing the casting therefrom. D, marks a casting, or plate, which the patentee calls a "turn-over plate," of the shape shown in plan view, at *fig.* 5*. It will be seen, upon referring to this figure, that the under side of the metal mould is formed with a projection at *c*, which the inventor calls a "knuckle," as the same resting in a corresponding recess ensures the mould being turned over, so as to bring the strap which is round the mould into the recess, *d*, in the plate, and the mould being again turned over the casting, together with the wedges and pieces employed for supporting the same, may be driven out of the mould by a drift at *e*, an opening being formed in the plate, D, for the casting to pass through; it will be necessary, also, to form a similar-shaped hole in the turn-table, or plate, before mentioned. As regards that part of this invention which has reference to the annealing of railway chairs, the inventor states, that he either places the castings in a kiln, such as is commonly used for annealing articles; or he takes the castings, when the metal is well set, and he places them in dry sand, or what he terms a sand bath, there to cool down gradually, by which the process of annealing is effected. And, as regards that part of the invention which has reference to the application of metal direct from the furnace, the patentee states, that he draws off into a ladle as much melted metal, without slag or cinders, as he deems necessary for the article to be cast, and brings the mould opposite to the ladle by the mechanical combinations before mentioned, in reference to the casting of railway chairs, by which the necessity for running the heated metal in channels, as hitherto practised, is entirely dispensed with; and the patentee further states, that this mode may be employed for the purposes of forming castings, without regard to the nature of the material of the mould or matrices.

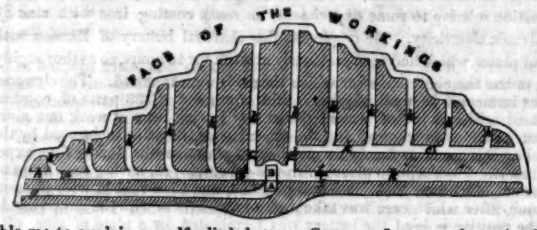
The patentee does not claim any of the parts, either separately or in combination, except when such parts are combined as follows:—The claims are, *firstly*, the casting of railway chairs, in moulds or matrices of cast-iron, or other suitable material; *secondly*, the use and application of two or more wedge-shaped pieces, in forming the interior surfaces of railway chairs; *thirdly*, the mechanical combinations, or apparatus, employed for facilitating the production of railway chairs; *fourthly*, the annealing of railway chairs in the manner described; *fifthly*, the application of metal direct from the smelting furnace, for casting in moulds of metal or sand, as in the production of railway chairs, hereinbefore particularly described.

Patent-office and Designs Registry, 210, Strand, Dec. 15.

Original Correspondence.

ON THE VENTILATION OF MINES.

Sir,—To those interested in mining, it is very gratifying to peruse your Journal, and at this time observe the various opinions introduced by men of science and practice concerning ventilation of mines. These discussions certainly ought to be conducted with every good feeling and wish for improvement, as the point is truly one of the utmost importance to those connected with mines. I beg to make an inquiry or two regarding the system of ventilation by piping, or carrying off the inflammable gas, without allowing it to mix with the general current in the mine. Can the regular coursing of the atmospheric air be carried on, and whilst the pipes for withdrawing the inflammable gas are in operation?—in plain, can both be effectually working at the same time? To me, it appears that the inflammable gas cannot be withdrawn in that way without injuring the airing of the pit altogether. To use a pump and small branch pipes, let the pipes be in to the face of the workings; you cannot prevent the air, in going round the face, from entering the first pipe, in connection with the pump, any more than, under the present system, you can prevent the air from taking the nearest course to the *air-furnace*. I append a sketch, which will enable me to explain myself a little better. Suppose, for example, a simple working on the long wall system, which is, perhaps, the easiest sort of working to keep well-aired:—A, the space for the downcast air, and B for the upcast, or return air; trace the direction of the air round the face of the workings over an air-furnace, at *f*, and into the upcast, B, with trap-doors, for the purpose of preventing the escape of the air drawn into the workings, marked *a*, *b*, *c*, *d*, *e*, and *f*. Now, to try the effect, by removing a trap-door or two, suppose *a* and *b* to be open—the result is, that the air from the downcast, A, passes along the course, *g* and *h*, and is drawn up the upcast side, B, without ever airing a yard more of the workings. Imagine the upcast, B, a main pipe, and each road, marked *k*, a branch connected with it, with an air-pump at work at the surface, and you will, in my opinion, have very nearly the same effect as that above stated by leaving open the trap-doors, *a* and *b*—of course, the size of the pipes would determine whether the whole of the air of the mine could escape through them; but, if not, the regular play of the air along the faces would be wholly deranged. As to the system of drawing off the gas by canals along the roof, without the aid of a pit to the rise or crop, and bringing it from the face of the workings back into an upcast, I do not exactly understand—that is, so that the working of the pit be going on at the same time. Perhaps, "Hibernia" will be kind enough to give a sketch of a working, and show the system of draining with one pit, and a yard coal dipping, at the rate of one in five. I know it is not natural, and I would say it is not generally practical, to work to the dip; but suppose that workings were carried on to the dip, instead of to the rise, I presume the trouble occasioned by gas would be greatly decreased—at least, any observations I have taken in dip-workings convince me of the ease of airing a dip-working compared with one to the rise—in fact, I believe, if a dip-working was carefully coursed, then an explosion in such would seldom be heard of.



December 7. N. B.

VENTILATION OF MINES.

Sir,—If Mr. Struvé has not already done so, he may call at the Pentwyn Iron-Works, and see a machine similar to his, and exactly upon the same principle, which was used there by me about seven years ago, for *forcing* air into some new workings, *before a proper air-pit could be sunk near the crop*. The only difference is, that he, by reversing the valves, has made it an exhausting, while mine was a forcing, machine; in almost every other particular, and in the entire principle, they are alike. I worked mine, by attaching it to the T beam of the pump, at the top of the pit. I borrowed my idea from an old sinker, who had seen something of the kind in some of his travels.—J. Cadman: *Tondu Iron-Works, Bridgend, Dec.* 15.

EXPLOSIONS OF FIRE-DAMP IN COAL FIELDS.

Sir,—In February, 1845, you were kind enough to insert a letter of mine in your Journal, of which the following is a copy:—

"As you are a zealous advocate for ameliorating the present condition of the mining population generally, and of coal miners in particular, I would draw your attention, and the attention of coal overseers especially, to a *new view* of the effects of explosions of fire-damp. It is a supposed fact, that many more lives are lost in consequence of what is termed the *after-damp*, than from the immediate effect of the fire. That this after-damp contains a large portion of carbonic acid gas (often termed sulphur by the working collier), there can be no dispute; but, with all due submission to the opinions of those experienced in such matters, I would say, that on the explosion of fire-damp in coal levels, there is a *perfect vacuum* formed in the centre, as it were, of the explosion (similar to the vacuum produced by the explosion of hydrogen and oxygen in Brown's gas-engine); and the effect upon all living animals incautiously exposed to the influence of this vacuum, is an instantaneous and *total exhaustion of the lungs*, and life, consequently, becomes extinct. Now, if it were possible (and, from inquiries made on the subject, I believe it to be so) for persons exposed to this vacuum to hold their breath, and firmly close their mouth and nostrils, for a few seconds, till the air returns, I think they would have a great chance of escaping with their lives—for, although the after-damp, or returning air, will, in almost all cases, certainly contain a large portion of carbonic acid, yet there may still be a sufficient quantity of oxygen rushing into the level along with it, to enable a person to breathe, and to exert himself, so as to remove from the scene of danger. That this new view of the effect of explosions of fire-damp in coal mines may lead to improved means of safety to the collier, is the firm belief and sincere wish of, Sir, yours, &c."

On the following week there appeared, also, in your Journal, a letter from Dr. Murray, of Hull, stating, "I may rest quite assured, that all persons who may die from the after effect of explosions of fire-damp, did so entirely from being thrown into a state of *asphyxia*," and not, as I had suggested, from "*exhaustion of the lungs*." Now, I am by no means convinced, that my suggestions are erroneous ones; but, on the contrary, am more than ever of opinion of their containing a great deal, if not the whole, truth on the subject—to get at which, is my sole object in making this communication—for, although explosions of fire-damp, or the burnings consequent thereon, may not be prevented by following out what I have proposed below, yet many lives may be saved, and much misery avoided, should it be fully established, that death, in the cases alluded to, follows from *exhaustion of the lungs*, and not from *suffocation*; because it would, I still think, be possible for individuals exposed to the *vacuum* of a fire-damp explosion, if previously properly instructed, to prevent the *exhaustion* in question; and, also, because I believe it possible to *reinflate the lungs*, even had such an exhaustion taken place.

But, supposing Dr. Murray's assurance in the matter to be correct, there can no doubt exist in his, or any other rational mind, of persons in a state of asphyxia being reanimated, were proper means put in operation without delay, as numerous instances of recovery from apparent death from drowning amply testify. The difference between suspended animation from drowning and choke-damp is being, in the first instance, suffocation with *water*, and in the latter with *carbonic acid*. Caustic ammoniacal vapour would instantly, in a manner, neutralise, and thereby remove all the ill effects of carbonic acid, if speedily applied; and the Humane Society have been the means of eliciting many effective modes of recovering persons drowned, or suffocated, in *water*.

What I would suggest is, therefore, that, at inquests on the bodies of those who may become victims to the *exhaustion*, or *after-damp*, of explosions of fire-damp, if the presiding coroner were to order a few *post mortem* examinations to be made, the *real truth* of the matter would soon be made to appear, and it would be settled for ever, whether the deaths in question were the consequences of *exhaustion*, or of *suffocation*—for, with all due submission, I would say, that if *suffocation* should have been the cause, the lungs would be inflated, and in precisely the same state as if the parties had been drowned in *water*, for which many remedies have been successfully applied; and, by analogy, should the drowning have occurred in *carbonic acid gas*, caustic ammonia, and, probably, many other restoratives may, no doubt, be adminstered with success; but if *exhaustion* be the actual cause of death, then the lungs would be completely drained of air and the only probable means of recovery in such cases, would be a *re-inflation of them* as quickly as possible. Perhaps, Mr. Editor, I may not have expressed myself so clearly in this matter as may be desired, in consequence of the subject being new to me; I, therefore, submit the above suggestions, in the hope, as I said before, they may lead to improved modes of safety to the collier, and be the means of originating inquiries, tending to rescue from the jaws of death, as it were, many persons in the full vigour and prime of life, upon whose labour large families often depend for a subsistence.—S. B. Rogers: *Nant-y-glo, Dec.* 14.

EXPLOSIONS OF STEAM-BOILERS.

Sir,—Your correspondent, Mr. Baker, in his letter on this subject, seems to have entirely overlooked several important facts. In the first place, the boilers had been in work for a period extending over 14 months, and no accident had occurred—the three-eighth plates, therefore, had been found amply sufficient to sustain the pressure, and even that of 80 lbs. to the inch, as witnessed by Mr. Sedge; the staying of the boiler was perfect, and, had it not been badly used, would have been so at the present time. The steel-yard safety-valve is also the most convenient form, and is that universally adopted, with the exception of the peculiar form of valve shown by him, and which is the adaptation of a rival manufacturer; neither are there those objections which have been urged against it by Mr. Lloyd, and echoed by Mr. Baker, whose only object seems to be that of confirming the unsubstantiated evidence of the Government engineer, who strove to condemn the manufacture of the boiler, and to carry the *animus* still further by producing facts which that gentleman had not deemed worthy of noticing—I allude to the alleged bad action of the weighted valve on the unexploded boiler. Does Mr. Baker, who, I hear, has had practical experience with marine boilers, hazard the assertion, that the *Cricket's* boilers had received even a due share of attention? If I mistake not, he had placed in his hands, by Mr. Meecham, at the time of the inquest, some of the corrosion taken from the interior of the *Cricket's* tubes—such corrosion amounting in thickness to nearly *half-an-inch*. Does this instance care and attention on the part of those employed? His assertion also of the *flat valve* being an objectionable shape, is in keeping with his *other facts*—in what are they objectionable? Had Mr. Baker been able to have shown your readers, I feel confident he would at least have attempted it.

I also object to his asserting, that the boiler was not dry, the strength not being sufficient to resist the ordinary pressure; the *erroneous* ideas with regard to the action of blast-pipes; and, lastly, the statement of the pressure-gauge being erroneous—a gauge, the theory of construction of which requires a knowledge of facts, not dreamt of in his philosophy. Will Mr. Baker endeavour to account for the foregoing objections in a satisfactory manner? If he will—which I much doubt—I may, then, ask him to solve the following enigma:—How could water obtain access to the interior of the boiler through a *feed-pipe*, which was nearly firred up at its end next the boiler?—a fact, which I imagined would have been brought forward against the engineer. Your correspondent seems to have exerted himself strenuously to shift the blame from men who, in his ideas, were immaculate, and attribute the explosion entirely to error of construction. Now, did this censor of the acts of others ever witness an explosion before? If he has, I think he would have been more diffident in venturing assertions so easy of disproval.—An Engineer: *Greenwich, Dec.* 14.

HISTORY OF THE ELECTRIC TELEGRAPH.

Sir,—In the review of the *Electric Telegraph*, by Peter Progress, in the *Builder* of the 13th Nov., it was mentioned (I suppose from that work), that a Mr. Rowland had "clearly established the fact, that an electric current might be made to pass through a continuous wire of great length." That fact was established about 100 years ago. All the electric telegraphs are merely varied applications of it. The only real inventions are, probably, the application of it to printing at a distance, and the applying it by one wire to many stations. Heighton's application of the gold-leaf electrometer, instead of the magnetic needle, can scarcely be called an invention; and the one-wired telegraph, used at Baden-Baden, appears to be that of Brett and Little, at whose telegraphic exhibition, in Furnival's Inn, I met him in August. The fact of the transmission of the electric current to great distances, was proved by Dr. Watson and friends on the 14th of July, 1747. They conveyed the shock across the Thames, at Westminster, on the 14th of August; they conveyed it a circuit of four miles—two of water, and two of dry ground—its velocity was so great, that no time appeared to elapse during its passage.—W. Chapman: *Leicester, Dec.* 15.

THE CORNWALL RAILWAY.

Sir,—A correspondent, who signs himself "A Cornishman," has, by his letter in your Journal, last week, endeavoured to mislead the shareholders in the Cornwall Railway. The contracts, for a considerable portion of the line, were signed, and the line commenced, some months before the period at which the Act he refers to is to take effect, and, therefore, a reference to three-fifths of the shareholders is not required. Another letter appears, on the subject of the increased subscription by the South Devon to the capital of the Cornwall Company. What the difficulties of the South Devon are I do not know, but whatever they may be they must soon terminate, as in the course of a few weeks that line will be completed, and opened to within two miles from Plymouth. The extension into Cornwall, of this important line, is of great consequence to its interests, inasmuch as the whole of the traffic from Penzance and Falmouth, with that of all the most populous part of Cornwall, must be brought over this line. It is, therefore, worth while for the shareholders of the South Devon to afford its limited aid to the Cornwall. The Cornwall Railway has, for three years, been the object of virulent attack from a variety of quarters; and every effort has been made on the Stock Exchange, as well as in the county, to depreciate its value; but the worth of the Cornwall line may be estimated from one simple fact, that, for three years successive, companies have been formed, and applications made to Parliament, for a line from Exeter, through the most barren portion of North Devon and Cornwall, without touching Plymouth in its route; and some hundreds of thousands of pounds have been wasted to wrest, if possible, from the Cornwall Company, the possession of the county. The South-Western Company have afforded every assistance to these efforts; and, if they could only get possession of the Cornwall line, would, I have no doubt, pay handsomely for it. They have now, however, abandoned this project. It is clear, then, that the traffic of Cornwall is a great object; and if it be remembered, that the Cornwall line will connect the splendid packet port of Falmouth with the still more important port and arsenal of Plymouth, it is obvious, that a more valuable extension of the railway system, nationally and commercially, cannot be found in any part of the kingdom, equally distant from the metropolis, and therefore, must not be abandoned.

Dec. 14. A Shareholder in the Cornwall Railway.

IRON TUNNELS—CHESTER AND HOLYHEAD RAILWAY.

Respected Friend,—It is amusing to hear all that is said regarding the iron tunnels, now constructing on the Chester and Holyhead Railway. One would be led to suppose, that the question at issue was, whether it was possible to reach some distant planet? Old men ominously shake their heads—engineers look in amazement—and novices are bewildered. Are all these symptoms of terror the result of ignorance, or of a vast amount of discrimination? In my opinion, there is about as much danger of the trains crushing the tubes, as of a vessel being destroyed by its cargo; but if all the fears that are expressed on this subject may be accounted for, it is by the fact, that there are persons who are in the habit of showing themselves nervous on hearing any new theory proposed—so that, on its succeeding, they may devoutly fall down and worship the eminent engineers who were giving the word of command. "Amicus," however, seems to think that the cause of the depressed value of the shares is connected with the fears which exist as to the success of the plan. Perhaps, however, he will be of a different opinion after being informed what amount will be required to complete these structures, which, in my opinion, would not fall short of one million sterling. The engineers had, of course, a *carte blanche* from the directors, if not from the shareholders—the province of the latter being to provide the money, and that of the directors to find employment for it. If all the tubes for the Menai Straits were placed end to end on the bed of the water in another locality, instead of being suspended in pieces, would not the transit across the water be as safe as if in the position in which they are to be placed? But, then, the eminent engineers have not proposed to employ them in the position they were intended when originally invented—consequently, it is *their* interest to declare a crusade against that plan. All the world is not, however, thank heaven, led by the nose. "Truth will conquer at the

last;" and, perhaps, the plan which I will shortly submit will convince some "against their will" of the facility with which the liquid element may be invaded. It appears, that the opinions of the professor who asserted that the circular tube was the strongest, has been thrown aside—the rectangular form being adopted for the Menai tunnels.

Liverpool, 12 *mo.* 13*th.* JOHN DE LA HAYE.

THE TELFORD MEDAL.

SIR,—I had lately to differ with Mr. Deakin, but am better pleased to agree with him, and I entirely approve his censure of the gift of the Telford medal for a paper, containing only one novelty, and that one absurd. That expansion of the upcast shaft, which Mr. Deakin condemns, is, as I took some pains, from the importance of the subject, to explain, in your Journal last April, a discovery for increasing the power of the wedge, by driving the large end first, and improving the draught of chimneys, by building them funnel-shaped upwards, to admit plenty of cold air downwards. The Institution of Civil Engineers is so intelligent a body, that this paper must have been read and crowned on a vacant night. The books, however, are perhaps intended to be used, and the gift apportioned to the necessity. I recommend to the next aspirant for the Telford medal, a treatise on the new use of the mechanical powers—how the point of leverage should coincide with the fulcrum to yield the greatest effect; and that, instead of a pulley, facilitating the draught of weight, the right principle is to attach a force in the opposite direction to which they are to move. These are, indeed, wonders for the Telford medal and the trump of fame; it is astonishing how such stuff lodges in her well-used instrument. I know only one modern discovery of equal magnitude—the assertion, lately made in your Journal, that projectiles, driven vertically upwards, move on with the accelerated velocity of falling bodies.

Gloucester, *Dec.* 13. DAVID MUSHET.

STORMS AT SEA—Mr. ADCOCK'S THEORY.

SIR,—From the numerous opponents which every inventor has to contend with, it really would seem that invention almost amounts to treason; no sooner does an inventor make known his discovery, than he is assailed by the book-learned would-be philosophers, and is considered almost the worst of men. Now, Sir, I have carefully examined Mr. Adcock's invention; and I consider that, instead of the treatment he has received, it reflects the greatest credit on his practical abilities. Mr. Williams, in his over anxious desire to condemn, wishes to know how many more trials Mr. Adcock requires to test his invention. Allow me to tell this gentleman, who is so confident in his own assertions, that the merits of the spray pump have not had a fair trial. I before stated, that the spray pump is not adopted for sinking operations, for reasons given in my last letter; but I can tell Mr. Williams this, that had Mr. Adcock as many friends to support him in testing his pump as he has ignorant prejudice to contend with against its merits, the spray pump would long since have been before the public; and Mr. Williams must even now exhibit greater testimonials of his abilities than he has done in his communications to the *Mining Journal*, before he will succeed in shaking my opinion with regard to the spray pump. The following table of the force given to winds at different velocities will go far enough to prove that Mr. Adcock's invention is not based on theory alone:—

Velocity of the Wind at Miles per hour.	Ft. per second.	Force in lbs. avoirdupois per sq. ft.	Common appellations given to the wind.
1	1·47	·005	Hardly perceptible.
2	2·93	·020	Just perceptible.
3	4·40	·044	
4	5·87	·079	Gentle, pleasant wind.
5	7·33	·123	
10	14·67	·492	Pleasant, brisk gale.
15	22·00	1·107	
20	29·30	1·968	Very briak.
25	36·67	3·079	
30	44·01	4·429	High winds.
35	51·34	6·027	
40	58·68	7·873	Very high.
45	66·01	9·963	
50	73·35	12·300	A storm, or tempest.
60	88·02	17·715	A great storm.
80	117·36	31·490	A hurricane.

Now, Sir, will Mr. Williams inform your readers, how it is that so many million tons of water are put in motion at sea with a force of not more than from 17 to 31 lbs. per square foot?—or, how it is with this comparatively small force that the water, in its agitated state, is frequently thrown up from three to four times the height of the assumed depth of Mr. Blewitt's pit, a large portion of water then becomes converted into a spray, and is carried for miles by the wind? It has also been ascertained, from recent experiments, that the sea water, during a hurricane, has exerted a force of three tons on a square foot.

It is perfectly evident that, if Mr. Adcock's pump only works at a pressure of 2½ lbs. on the square inch in the blast cylinder, he commands a force of 360 lbs. on the square foot, which would not only be sufficient to blow up almost any quantity of water out of a shaft, but such a force would convert the whole of a sea into a spray, considering the effect of a hurricane. In conclusion, Mr. Editor, I must inform Mr. Williams, that I see nothing in his theoretic calculations that will bear an investigation—and the only object he appears to have in view is, to renew the vituperative controversy of Mr. Brown; but he must, by this time, be aware, that your valuable columns are expressly devoted to scientific research and information, and not to mere personal attacks. I have yet no doubt Mr. Adcock will find some unprejudiced party who will supply him with a deep shaft, plenty of water, and a good engine to test his invention, when I wish him every success.—C. E.: *London*, *Dec.* 15.

LIGHTHOUSES ON THE GODWIN SANDS.

SIR,—The past week has witnessed another wreck on these destructive and insatiable sands; and, although the crew were providentially saved, property to an immense amount has been sacrificed. The terrible disasters which are continually happening on this fatal ocean spot, even during moderate winds, and the almost certain destruction to vessels driving in its neighbourhood during a stormy night, when the crews cannot tell their whereabouts, reflect anything but credit on the maritime engineering talent of England. A lighthouse on this spot, would, indeed, be "a light for all nations;" and why cannot such a desideratum be carried into effect?—simply, because, in all the attempts which have been made to accomplish it, a very erroneous view of the nature of the difficulties to contend with has been entertained. In all the attempts and proposals for the securing a firm foundation for a lighthouse on the Godwin Sands, engineers have been content with a mere resting-place *on the chalk*, conceiving that, by forming a massive and heavy solid body for a foundation, they should be able safely to raise thereon a stable superstructure, which would stand the shocks of wind and wave from the *vis inertiæ* of its own gravity. Now, Sir, a little consideration of the nature of these sands, will prove that no structure, merely sunk through the sands, and *resting on* the chalk, can ever stand the fearful concussive force to which it would here be subject. Many hundred thousand tons of sand are during a storm continually shifting, and being hurled, by the force of the sea, with immense violence, first one way, and then, on the return wave, thrown back with equal force on the other. Now, even supposing it possible to succeed, during moderately calm weather, in completing the construction of a lighthouse on such a plan as proposed by Mr. G. Shepherd, C.E., in your valuable Journal of the 27th ult. (a plan, by-the-bye, exceedingly good as far as it goes), what would be the effect of the first storm which occurred?—Why the continual shifting of the sands, *en masse*, passing and repassing the erection, would, in an unlucky moment, leave a chasm on one side, while a hill of sand would exist on the other; and, in a very short time, from unequal pressure, and the continuous beating of the waves, the whole mass must be shifted from its berth, and nothing could save it from destruction. The Eddystone Lighthouse is a proud proof of what a structure, with a foundation *in a rock*, will stand from the buffetting of old Neptune; and I can see no reason why one equally secure should not be erected on the Godwin Sands. At low water, the depth to the chalk does not exceed from 40 to 60 ft.; and, even should it be 80 ft., it is not a depth to alarm the enterprising engineer.

In Dr. Pott's process of driving hollow piles by pneumatic pressure, we have an auxiliary which would enable us to effect wonders; and I would propose that a double or treble row of tubes (say) 3 ft. diameter, and in 20 feet lengths, be sunk in a circle, to form an enclosure, taking Mr. Shepherd's dimensions—say, 30 ft. inside diameter. These tubes to have merely flute joints; so that, by the aid of tow and grease, they would fit perfectly water-tight, and be flush on the outside. The circle thus formed to be constructed sufficiently high above the sands to be out of the reach of high-water mark, and the interstices to be filled with concrete, as proposed by Mr. Shepherd. The sand is now to be removed from the inside of this enclosure by hand labour and powerful pumps, and an excavation, of at least 20 ft. deep, sunk in the chalk, in which a foundation equal to the Eddystone could be laid. To undertake such a work with a prospect of success, the most careful preparations must be made, and no reasonable expense spared; a period of the year must be chosen when calms of weeks' continuance are frequent; a powerful, highly-practical, and intelligent working staff must be provided, and powerful machinery be in readiness on the spot, that not a moment be lost in completing the foundation. The circle of piles should be commenced in, at least, eight points at once, all working round the same way until it is complete; and those who have witnessed the rapidity with which a pile descends by Dr. Pott's plan, will, I think, agree with me, that but few days would elapse before this great preliminary would be complete. This once effected, the superstructure could be carried up in safety, and would, I have no doubt, withstand the wildest hurricane of the Channel—proving a national honour to our engineering prowess, as well as a "light for all nations."

Blandford-street, *Dec.* 8. TERBO-NAUTICUS.

ACCIDENTS ON RAILWAYS.

SIR,—There appear to me to be *two* classes of accidents on railway trains, which peremptorily call for the most prompt attention, on the part of railroad companies, or of Government; and if unheeded, the public voice will sound its tocsin, trumpet-tongued. The first of these is the absolute necessity of a direct communication between the guard and each carriage of the train, in the case of accident, or danger—the perilous situation of the Countess of Zetland, and the deplorable accident of her attendant, might well awaken the most callous and indifferent mind. It is the most recent, but only one of this class of formidable dangers. It is immaterial whose arrangement is adopted, Brett and Little's, or any other, so that the transit of communication be the *speed of lightning*—voltaic electricity being the means, as I had already proposed.

It appears, I must confess, strange to me, that no means are adopted to prevent the frequent issue of *ignited matter* from the locomotive. The burnt patches on the embankments of railways are proofs of the mischief; and I have been in an open carriage, which has been visited by a *shower* of ignited matter. In storms, I am persuaded, such has been wafted for *several miles*, and this has been the cause of the conflagration of the farmer's stack-yard, ascribed to the incendiary. The locomotive almost brushes, in its transit, the *Gourrock Rope-Works*—a terrible conflagration has recently occurred there, and a *similar* catastrophe happened when I was in that quarter, two years ago!

The summit of the chimney of the locomotive engine should be secured by *wire gauze*, and a similar provision below. Luggage on the top of the carriages should be mantled with coverings brushed over with *silicated potassa*, which would render the envelopes *incombustible*. J. MURRAY.

Portland-place, *Hull*, *Dec.* 15.

FLINTS IN CHALK.

SIR,—The phenomenon of flints in chalk is one of the most curious, if not the most difficult, problems in geology. It has outwitted the sagacity and cunning of the most eminent men—Dr. Buckland's hypothesis was not original, and the porcelain manufacturer had never met with the silicious nodules assumed to have been sometimes formed in his process. The principle of seggregation, as adopted by Mr. Bowerbank and others, stops short at proximate results, as appears at least to me, and does not extend to ultimate causes.

Now, Sir, if we suppose that the chalk with flints, and, what is extremely probable, was originally in the state of *silicate of lime*, the transfusion, or interfusion, of carbonic acid gas, would separate the silica, which would be precipitated; and on the principle of the attraction of aggregation, would invest the various nuclei which might be presented, such as spongia, and their allies, &c., so beautifully exemplified in the Wiltshire chalk. The various indeterminate masses of flint nodules, as well as the continuous veins or seams of flint, would thus find an easy solution. The fact that there are two bands, or strata, of chalk—the higher stratum being that with flints, sometimes mingled *pêle mêle*, without any determinate arrangement, and at other times presented in a linear form, and these, too, in parallel lines, yet entirely composed of distinct nodules, or amorphous masses, or a distinct continuous seam of silicious matter—all these phenomena are in perfect keeping and conformity with the solution of the phenomena now propounded. The green sand formation, and its silicious fossils, by no means militates against, but rather confirms, the supposition.—JOHN MURRAY: *Portland-place*, *Hull*, *Dec.* 15.

Mr. RADLEY'S EL DORADO.

SIR,—The fiery, but somewhat scurrilous, Mr. Radley, has set forth the natural advantages of the Lothbroke district, with a degree of vivid colouring which would in nowise have discredited the transcendant genius of Mr. George Robins, of puffing notoriety.

I am quite aware of the real advantages possessed by the district in question, and they require no puffing to enhance their sterling merits. Let Mr. Radley look for his 200-horse power of water in the dog-days, and it will, alas! be found wanting. The *cheap fuel* is another pleasant delusion.

The situation is not at present a good one for an iron-work: but money can effect great alterations, and seven miles of tram-road, and 200-horse power water-gins, at 800*l.* per mile—which amounts *only* to 5600*l.*—is one of the trifling steps necessary to be taken to improve this situation. Then an Act must be obtained to form this railway, &c. But it is needless to argue with Mr. Radley; for if Lundy Island were a second Elba, Mr. R. would point it out as a fine situation for an iron-work; and, indeed, there is *water-power* enough at Lundy, even at its *drooghly minimum*.

I do not wish to meddle with Mr. Radley, or his honour—which latter is, I fear, a troublesome possession, needing frequent repairs, and which was, I presume, *hors de combat*, whilst Mr. Radley was reading, and digesting the contents of, my letters to Sir Thomas Lethbridge. If Sir T. Lethbridge would make up his mind to lay out 50,000*l.* at Lothbroke, he might realise 100,000*l.* per annum, instead of 20,000*l.* And I really think that Mr. Radley is as capable as any man to develope the resources of the district; for, to give him his due, he is, I believe, a clever and intelligent person; and, however mean his conduct, or however abusive his language towards me, may have been, I never had, nor have I now, the slightest wish to crush his prospects.

The *complete* experiments were instituted to ascertain, whether puddled steel really could be made, of superior quality, or otherwise, that it would necessarily possess an inferior character. The latter, as a fact, was completely established; and, therefore, Oh, most logical Radley! the experiments were *completed* and *complete*.

In my letter respecting the pound of coke, I see some typographical errrors, such as "*approximated*" for "*approximates*," &c.; and I notice this, to prevent Mr. R. from being down upon me again, making my redundant *but* a *butt* for the shafts of his *ironical raillery*.—ROBERT MUSHET: *Coleford*, *December* 13.

COMMUNICATION BETWEEN GUARDS & ENGINE-DRIVERS.

The following interesting letter has been addressed by Mr. Harding to the Institution of Mechanical Engineers, Birmingham—

SIR,—I observe that you invite information on the subject of the communication between guards and drivers of locomotive trains. The subject has, of course, frequently occupied my attention as a railway manager—the conclusions to which I have come are as follows:—There are two modes of communication between guards and engine-drivers now in general use on narrow-gauge railways; first, by signal, by means of a flag by day, and a coloured lamp by night; secondly, by the guards putting the break on. The first of these modes—viz.: by signal—cannot be trusted to; the regulation is, that the fireman shall frequently look back to the guards, but in practice you cannot depend on their doing this; in a long train, moreover, by the interposition of luggage or of a high carriage, the view is frequently obstructed. The second of these modes of communication is also uncertain; if the break is out of order, or the break-block is worn, the wheels will not be prevented from revolving. Even if the wheels are prevented from revolving, experience shows that this will not, under all circumstances, although it generally will, attract instantaneously the engineman's attention. In the case of the late accident at Sowerby-bridge, on the Manchester and Leeds, for instance, it appeared that on a stormy night a carriage was dragged along for two miles, being off the rails all the time, and that the engineman's attention was only then drawn to the fact by a signal made to him at a station he was passing. I say that these two modes of communication are in general use on the narrow gauge railways, because on the broad gauge railways, connected with the Great Western, flags are not generally used, and the guards being placed inside the carriages, instead of outside, as on narrow gauge railways, are not in a position to communicate, by signal, with the engineman, so that on such railways the mode of communication between the guards and enginemen is practically limited to the use of the break. Neither of these modes of communication then is satisfactory, and a host of ingenious inventions have been suggested to supply their defects; but none of these which I have seen or heard of, are such as to satisfy me that they can be depended upon as unerring modes of communication; and, unless they are decidedly better than the modes of communication now in use, they are calculated to do more harm than good, by introducing another, and, perhaps, a complex object to distract the attention of the guards and porters. Of this class are all the communications by cords or wires; all these require springs, guiding-rings, fastenings, and generally a large box to be affixed near the guard's seat, to admit of the extension and contraction of the cord or wire from the yielding of the buffer-springs (nearly 2 ft. between each carriage, or in a train of 30 carriages 58 ft.), and for admitting of the lengthening or shortening of the trains. In practice, the rings and hooks would now and then be knocked off, the fastenings of the wires and cords would occasionally be forgotten, the springs and other apparatus would sometimes get out of order; the box containing the roll would be placed on a carriage which would require to be taken off at a station or junction, in consequence of some extraordinary accession of traffic, or to be left behind in consequence of an axle heating, or from some such casualty, and in detaching or attaching carriages the wires or cords would occasionally be broken. In order to make the system work, moreover, the carriages and trucks on every line in the country should be fitted with the necessary apparatus, and the fittings would have to be kept in repair on every carriage; since, by the railway clearing-house arrangements, the carriages of every narrow gauge company can travel on any other narrow gauge railway. These liabilities to derangement are in practice fatal to the trustworthiness of all this class of contrivances; the present plans of communicating by signal, and by break are less likely to fail, and the attention of the guards had better be directed on the journey to seeing that their signals and breaks are in good order, and that of the fireman had better be alive to keeping a good look-out behind than to looking after wires or cords and their accompanying apparatus. The best contrivance of this sort I have seen, which is free from many of the ordinary objections to this class of contrivance, is that of Mr. E. Allen, for an electric communication; this would require to be tested before any opinion as to its practical value could be formed. Another class of contrivances for communication consists of instruments for transmitting sounds, such as bells, gongs, pistols, horns, and whistles: these also are open to objection; very few sounds can be depended upon to reach an engineman, with perhaps a long train on a stormy day. Horns required skill to blow them; pistols miss fire, and are awkward things to carry about; bells or gongs must be large and heavy, and affixed to carriages, which carriages, as in the case of those fitted up with apparatus for cord communications, which I have already referred to, it will be necessary, occasionally, from accidental causes, to leave behind. Nevertheless, although I do not knew any unexceptionable mode of transmitting sound, which has yet been suggested, more is, I think, to be effected by this class of contrivances than by that involving mechanical strain, as with wires and cords; and sound signals have the great advantage of being instantaneous in their action—we have the example of the steam-whistle, which completely answers the purpose for a communication from the engineman to the guards. Lest it may be thought that, in considering the modes of communication now in use and those suggested, I have conjured up unnecessary or improbable impediments to their success, I would remind the members of the institution that it is found in practice that accidents generally arise from an unforeseen conjuncture of circumstances; and that for one accident which occurs 10,000 are prevented by the precautions which are already taken; in establishing, therefore, new arrangements, we are bound to avoid all the casualties which we can foresee are likely to arise. Having referred to the modes of communication between guards and drivers which are in use, or which have been proposed, I will now state the plan which experience has satisfied me should be adopted, and that independently of any contrivance, however felicitous, which may have been, or may hereafter be suggested. It is that the guards should have the means of readily getting along every train, whether a passenger or a goods train, to the engineman. This was the original idea in narrow gauge trains, for the means are afforded by getting from one carriage to the other, but the idea has been imperfectly carried out, inasmuch as a horse-box or a luggage-van afford no facilities for getting past them. Nothing is easier than to remedy this by hold-fasts, and a narrow foot-hold. In the case of flat trucks loaded with such goods as cotton, uprights at the four corners, and a rope from one upright to the other, would afford a hold for the guard, and would also at the same time tend to steady the load. In the vehicles which travel in passenger trains even such an addition as this would not be necessary.

The guard should have, in my opinion, this mode of getting safely and quickly along every train, even independently of the purpose of communicating with the engineman, in order that he may be able to go to an axle if it appears to be heating, to attend to a passenger should he be called to any carriage, and generally in order to satisfy himself that all is right, which it is clear he can do but very imperfectly when perched on a carriage as he now often is, and without the means of attracting the engineman's attention with certainty and promptitude, or perhaps, in consequence of the intervention of a carriage with a short foot-board, or of a horse-box, unable to leave his post with safety to himself. If the communication along the train from carriage to carriage to the engine were perfected, these objects would be attained, and a mode of communication the most simple and unfailing which could be devised would also be established. At the same time there would be no additional duty imposed upon the attention of the guards or drivers, nor would there be anything to prevent the adoption, at any time, of any instantaneous signal which may be found effective. If it were generally known that there was a mode of communication practicable by any man of ordinary activity, from one carriage to another, I think it would go far to remove the uneasy feeling which now prevails in consequence of the difficulty which has been found to exist in calling the attention of the guard on those rarer emergencies, when the necessity for a communication between the passenger and guard has arisen. On the broad gauge lines connected with the Great Western Railway, there is generally no facility afforded for getting along the train, but such facilities can with equal ease be afforded in broad gauge trains as in narrow, by trifling additions to the vehicles; indeed, I caused additions, with this object, to be made to the broad gauge carriages on the Bristol and Gloucester Railway, when I had the control of that line. In speaking to mechanics, I need not say, that such matters of regulation have no more necessary connection with the gauge of the railway than other questions erroneously connected with that dimension. WINDHAM HARDING.

30, *Great George-street*, *Westminster*.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Westminster Medical—17, Saville-row	8	P.M.
MONDAY	Statistical—12, St. James's-square	8	P.M.
	Chemical—Society of Arts, Adelphi	8	P.M.
	Medical—Bolt-court, Fleet-street	8	P.M.
TUESDAY	Linnean—Soho-square	8	P.M.
WEDNESDAY	Microscopical—21, Regent-street	8	P.M.

GEOLOGICAL SOCIETY.

DEC. 1.—Sir H. T. DE LA BECHE (President) in the chair.

S. Hughes, Esq., G. H. Saunders, Esq., R. Meeson, Esq., J. F. Bateman, Esq., A. Robertson, Esq., and J. R. Lingard, Esq., were elected Fellows.

"A Report on the Fossil Remains of Mollusca from the Palæozoic Formations of the United States, contained in the collection of C. Lyell, Esq.; with Remarks on the Comparison of the North American Formations with those of Europe," by D. Sharpe, Esq., was read. Mr. Lyell's collection contains about 200 species of mollusca from formations ranging from the lowest fossiliferous groups up to the top of the Devonian series, principally from New York. The formations in this state have recently been classified by Mr. James Hall, in his State Report, and compared with the European series. His table exhibits a greater number of groups than are distinguished in England; but this arises wholly from minuter subdivision, and does not imply, as is frequently supposed, that the series in the United States is more complete than in this country. It has likewise been supposed that there are fossiliferous beds in America lower than any in England; but for this opinion, also, there seems no valid foundation, and none of their beds appear of greater antiquity than the oldest fossiliferous strata in North Wales. From a review of the organic remains, compared with those in England, Mr. Sharpe finds that the whole system naturally divides into three great groups:—1. A vast accumulation of sandstone, with occasional beds of limestone, reaching from the earliest fossiliferous beds up to the Medina group, inclusive.—2. A great calcareous series, mixed with some shales and sandstone, extending as high as the upper Pentamerus limestone.—3. A more extended argillaceous series, consisting chiefly of shales and argillaceous sandstones, and reaching up to the Chemung group, on which the old red sandstone rests. The organic remains of the lowest, or sandstone, division present a great accordance with those found in the lower Silurian formations in Europe; 14 out of 45 species in Mr. Lyell's collection, or nearly 30 per cent., being well-known European forms. In the calcareous series the agreement is still more remarkable—20 out of 50 species of mollusca, or 40 per cent., being common to Europe, and a very large proportion of them to the Wenlock formation. In the upper, or argillaceous, division, in more than 100 species, only 22, or about 20 per cent., are common, and most of them carboniferous, or Devonian, species—so that, on the whole, this group may be identified with the Devonian system of Europe. Mr. Sharpe finds that some species, as the *Spirifer Urii*, *Terebratula reticularis*, and *Orthis resupinata*, occur in an earlier part of the series in America than in Europe; and may thus be considered as native Americans, which have migrated at a more recent period to Europe. Other species, as the *Leptæna depressa*, seem, on the contrary, to have appeared earlier on the east of the Atlantic—consequently, migrating in an opposite direction. Not only species, but also groups, of shells occur earlier in one country than the other, and thus teach us very forcibly how liable to error are all classifications of the formations of distant regions, based only on the *generic* resemblance of organic remains.

LAMBETH NEW IRON BRIDGE.

We have much pleasure in referring our readers, and the public, to Mr. T. Motley's very splendid and novel design for the proposed Lambeth Palace Bridge—a beautiful lithographic engraving of which will be published in a few days (see our advertising columns). The engraving is exceedingly well executed, and, we think, reflects great credit to the artists, Messrs. Jerrard, Fleet-street. We cannot do better, for the information of our readers, than by copying the following title and description, which accompanies the engraving:—

VIEW OF THE PROPOSED LAMBETH PALACE IRON BRIDGE, LONDON,

DESIGNED BY THOMAS MOTLEY, C.E., BRISTOL.

The above-mentioned bridge is proposed to be constructed, on the plan suggested by T. Motley, in 1936—a large model of which was made the following year, with a view of getting a bridge of the kind adopted over the Thames, from Charing-cross to King's-arms-stairs, with an arcade of shops on the upper part, and a carriage and foot-way under—which was inspected, and highly approved of, by many of the most eminent mathematicians, noblemen, &c.; among whom may be mentioned Davies Gilbert, Esq., president of the Royal Society; Dr. Birkbeck, the Bishop of Ferns, Dr. Lardner, the Marquis of Lansdowne, Lord Auckland, Lord Lowther, &c., &c.; and also by many of the most eminent engineers, architects, &c.—among others, Barlow, Bramah, Nash, Tredgold, &c., and was deemed by the latter eminent engineer as the first of the kind ever projected to be composed entirely of iron on the principle—viz.: the bow and string—with a correspondent horizontal line on the crown of the arch, connected with the lower tie-line by vertical bars, at suitable distances, through the arch—thereby constituting, as Dr. Lardner described it, a skeleton beam, by confining the arch between two parallel horizontal lines, so as to afford the convenience of a road, or arcade, above, and a carriage and foot-way below: on which plan a foot bridge was subsequently constructed by T. Motley, for the directors of the Newcastle and Carlisle Railway, at Newcastle; and the same principle has been adopted for a bridge at Newcastle, over the River Tyne, and is now being erected under the direction of Robert Stephenson, M.P., in several spans, of 120 feet each, for conveying the railway on the top, with a carriage and foot-way under—one of which spans has been tested with a load of 600 tons!—thus proving the soundness and safety of the principle—which principle is adopted in constructing beams (entirely of wrought-iron), at Paris, for supporting the lofty and ponderous fronts of buildings, instead of cast-iron girders. The above design exhibits seven arches, of 100 feet clear span each, which, including the piers, will make the bridge upwards of 800 feet long. It is proposed to construct each span with 8, or more, ribs, or arches; and to make the floor upwards of 70 feet wide—so as to allow, if thought desirable, of two carriage-ways, about 16 feet each, and two foot-ways of from 8 to 10 feet wide, and two rows of shops, and a room over, about 12 feet square, and a smaller room over the foot-way of 8 or 10 feet by 12 feet. The whole of the framework and frontage to be constructed with wrought and cast-iron, with a substantial timber or iron floor; and, if advisable, a promenade, of about 18 or 20 feet wide, may be made on the top of the structure, with a foot-way, to connect them, over each span. The portion representing arches are only ornamental, the strength of the fabric being derived from the arches enclosed by the front, or facing, of the buildings.

FORGING AND WELDING.—If a piece of iron is filed while hot, the filings appear to increase in temperature as they fall to the ground. I am inclined to think that such is the fact, for if a piece of iron be taken welding hot from a forge fire, and subjected to a blast from the mouth, or common house bellows, it may be kept hot, or even wasted by the action of the blast; I have been informed, that nail-makers have a small pair of bellows fixed in front of their anvil, to blow on the iron while working it, to keep it hot. Perhaps some of your readers may be able to tell who first put this plan in practice? It may be worth considering whether nail-making is the only branch of art it can be applied to. As a practical smith, I have an idea that its use might be very greatly extended; for example, the welding of railway-tyres, forging-axles, making cranks, shafts, anchors, &c. At all events, a trial on some heavy work might be made by any one having the opportunity, at a very little, or no expense.—Correspondent of *Mechanics' Magazine*.

THE LATE COMMERCIAL CRISIS.

In order to present, in a convenient form, a statement of the principal failures which have occurred in London during the recent crisis, we publish the following table, showing the date of the respective stoppages, the names of the firms, the description of business in which they were engaged, and the amount of their assets and liabilities, as stated in the several balance-sheets presented at the respective meetings of their creditors, where such meetings have taken place. The list presents many interesting features—the chief being the very respectable amount of assets, which the majority of the fallen houses show to their credit. It is also a remarkable circumstance connected with these failures, that only two or three of the whole number have been thrown into the Court of Bankruptcy, for the purpose of being wound up. Instead of adopting this course, the creditors, in every instance in which the firm could show a favourable balance-sheet, agreed to wind up the business under inspection:—

1847—*Stopped.*	*Name and Business.*	*Liabilities.*	*Assets.*
Aug. 6	Charles Douglas and Son, corn trade	—	—
9	E. Robertson (deceased), Mauritius trade	—	—
10	Leslie, Alexander, and Co., corn trade	£573,502	£231,862
11	Coventry and Sheppard, ditto	—	—
11	King, Melvil, and Co., ditto	—	—
13	Giles, Son, and Co., ditto	152,824	90,911
21	W. R. Robinson, and Co., merchants	94,362	100,390
23	Castellain, Sons, and Co., ditto	69,651	33,603
27	W. and J. Woodley, corn trade	99,509	90,845
Sept. 4	T. Booker, Sons, and Co., ditto	—	—
10	Thomas Usborne and Son, ditto	59,457	33,527
10	Hastie and Hutchinson, ditto	50,451	38,796
11	Gower Nephews and Co., Mauritius trade	450,832	112,831
11	Allison, Cumberlege, & Co., South American trade	—	—
14	Sanderson and Co., discount brokers	1,725,000	—
17	Reid, Irving, and Co., Mauritius trade	600,432	—
25	Cockerell, Larpent, and Co., East India trade	619,393	809,254
27	Cockburn and Co., army agents	—	—
27	M. L. Bensusan & Co., Mogador & Barbary, merc.	52,016	3,951
28	Perkins, Schlusser, & Mullens, Baltic & E.I. trade	127,327	136,048
29	Pry, Griffiths, and Co., India and colonial brokers	90,979	19,231
30	Lyall Brothers and Co., East India trade	340,387	151,556
30	Samuel Phillips and Co., ditto	101,474	100,075
30	William Tulloch Fraser, ditto	33,665	40,297
Oct. 4	Rougement Brothers, merchants	—	—
4	John Thomas, Son, and Lefevre, ditto	401,760	441,972
7	F. J. Van Zeller, ditto	—	—
9	Richards, Little, and Co., East India trade	144,676	50,430
10	E. Bernoulli, merchant	—	—
10	Manoel J. Soares, ditto	—	—
11	Jas. and Wm. Morley, Manchester warehousemen	119,731	99,217
12	William Naab, ditto	—	—
13	Barclay Brothers and Co., Mauritius trade	389,504	398,491
15	Laurence, Phillips, and Sons, East India trade	18,368	64,840
17	F. Barnes and Co., ironmongers	—	—
23	Scott, Bell, and Co., East India trade	—	—
27	J. P. Howard and Co., colonial brokers	—	—
Nov. 1	Coates and Hilliard, American merchants	72,057	35,462
2	L. S. Curtis, hide trade	—	—
6	Judah, Cohen, and Sons, West India merchants	—	—
8	Thurburn and Co., East India trade	109,139	139,604
8	Johnson, Cole, and Co., ditto	112,666	71,844
10	Ryder, Wienholt, and Co., merchants	34,587	23,670
12	Abbott, Nottingham, & Co., shawl warehousemen	—	—
15	Trueman and Cook, colonial brokers	—	—
16	Robert Farrand, corn factor	—	—
22	J. and H. Reay, wine merchants	47,791	13,510
22	A. A. Lackersteen, East India trade	178,115	80,742
22	Lackersteen, Crake, and Co., ditto	37,555	25,251
25	Tanner and Ward, leather factors	—	—
26	Sargant, Gordon, and Co., produce brokers	—	—
26	Leaf, Barnett, Scotson, and Co., warehousemen	85,575	89,079
Dec. 2	W. Pemberton and Co., Canada merchants	—	—
2	Charles Trueman and Co., merchants	—	—
9	Gates, Coates, Bartlett, and Co., calico printers	13,000	2,000
11	Lysaght, Smithett, and Co., East India trade	—	—

IMPORTATIONS OF THE PRECIOUS METALS.—The arrivals of bullion and specie during the past week have been on a very large scale, not only from Hamburgh, Rotterdam, and the United States of America and Callao, but even from Sydney, New South Wales, and Australia, amounting to upwards of 1,500,000*l.* in gold and silver, partly on private account, and to the Bank of England, whose coffers are now well stored with the precious metals to the amount of nearly 13,000,000*l.* sterling, so that money is not wanting in the City. A considerable consignment of gold is expected by the next packet from Hamburgh and from Russia, to be invested in the funds and the new Belgian loan, which the house of Rothschild is stated to be the contractors of. The quantity of gold and silver at the disposal of the Emperor Nicholas of Russia, exceeds 10,000,000*l.*; and the Austrian Treasury has at its disposal a sum of 50,000,000 florins (about 6,000,000*l.*) in gold and silver bars, which is chiefly the return of the success that the State copper mines have yielded during the last few years. It is a curious anomaly but still a fact—Northern Europe is the gold mine of the globe; and that, notwithstanding all the explorations and speculations in South America, this precious ore is found in only a limited portion of the New World; whilst silver and copper being the most predominant, many of the adventures by English companies have hitherto proved unsuccessful, in consequence of working old, or exhausted, mines of the Spaniards, instead of trying new veins, which are well known to exist, particularly in Chili, which is rich in minerals of every description, and only requires the enterprising energy of Englishmen to work. The facilities afforded to foreign adventurers by the President of this flourishing republic to mining undertakings, and the projected establishing of the seat of Government at Valparaiso, the great commercial port on the south-western coast of the southern hemisphere, will have a most beneficial tendency to enhance, not only mining enterprise, but the prosperity of the country, and those who may embark in its common wealth.

LONDON AND NORTH-WESTERN RAILWAY.—This company has recently altered their fares, by which, in some instances, an increase of from 12 to 15 per cent. is caused. We have no fault to find if, in regulating their fares, the directors of a company deem it necessary to increase a portion of them; but, as such increase is likely to cause some inconvenience to passengers and parties who find themselves suddenly called upon to pay more than they have been in the habit of doing, and who are naturally inclined to ask for explanations upon the subject, we think that, at the least, it behoves the chief officers of the company to impress upon their underlings the propriety of giving courteous answers to such questions as may be asked. We have received more than one complaint on the subject, and are assured by a gentleman on whose veracity we can rely, and who is in the frequent habit of travelling on the line, that upon being charged something like 12½ per cent. more than usual, he asked whether the fares had been raised, but the only reply he could obtain was an intimation that he was in the way, and an order conveyed in anything but a proper tone to "pass on." We understand, also, that it has been found impossible to expedite the trains between London and Manchester, as promised upon the opening of the Trent Valley line, and that the time of the express train is again to be extended from 5½ hours to 6. Whilst speaking of this line, we may be allowed to allude to another subject of fair complaint against the management—viz.: that there is no train between London and Liverpool, conveying second-class passengers, after eleven o'clock in the morning; while the Great Western Company, with a less commercial line, runs four trains, accommodating that class between London and Exeter after the hour mentioned.

SOUTH-WESTERN RAILWAY.—A committee of officers of this company started, on Tuesday last, from the Nine Elms station, by special train, to inspect the line throughout, and report thereon. On the first day they took every station between London and Southampton; on Wednesday they proceeded on the Dorchester line (61 miles). On Thursday the committee started from Southampton at nine o'clock, and proceeded to Bishopstoke, where they were engaged some time in inspecting the extensive works now nearly completed. They then proceeded on the branch to Salisbury (22 miles), minutely examining the line as they went on, stopping at Romsey, Dunbridge, and Dean stations, after which they traversed the line to Gosport, making observations at the Botley and Fareham stations; and, having thus completed their important duties, the committee returned in the afternoon to London. It is understood that their report was laid before the directors yesterday.

GLOUCESTER AND DEAN FOREST RAILWAY.—We hear that it is intended to complete this line early in the spring of 1849, to its point of junction with the South Wales. The directors of the South Wales Railway have just determined upon proceeding at once with the portion of the line extending from Swansea to Newport. We understand, that the contractors for this portion have either received, or are about to receive, notices to complete their contracts within the time originally specified.—*Cheltenham Chronicle.*

DUNDALK AND ENNISKILLEN.—Last week the Earl of Roden and other directors inspected the works on this line, commencing at Castleblayney and proceeding to a point beyond Enniskillen, a distance of more than 12 miles. The whole was found to be in a very forward state, the bridges, culverts, &c., nearly all completed, and the road ballasted for several miles. There are yet, however, a few of the heaviest cuttings in which some work still remains to be done; but it was expected that the line from Castleblayney to Dundalk would, in the course of four months, be completed and opened for traffic.

IRISH GREAT SOUTHERN AND WESTERN.—This line will be opened to Thurles in January next, and to Limerick in three or four months. Should no unforeseen circumstances occur, it will be opened to Blackpool (Cork city) next September.

MEETINGS OF PUBLIC COMPANIES DURING THE WEEK.

WEDNESDAY...Great Hewas Consols Mining Company—Red Lion Hotel, Truro.
Royal Exchange Assurance Company—offices, at Twelve.
Callington Mining Company—offices, at Two.
THURSDAY.....Devonshire Great Consols Mining Company—offices, at Two.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

BANK OF AUSTRALASIA.—The half-yearly meeting of this company was held at the offices, Austinfriars, yesterday (Friday).—G. H. FORSTER, Esq., in the chair.—The report presented by the directors was, on the whole, favourable as respected the colony. The accounts were reserved for the next meeting. Some dishonoured bills had come into the hands of the company during the late failures, but the bank had security against loss. The verdict in respect to the suit between this company and the Bank of Australia was expected to be given in January.—Some discussion took place as to the position of the bank, in which Mr. Wotton, Mr. Meeson, and several of the directors took part.—The CHAIRMAN stated that, in his opinion, the capital of the company would, after the investigation now going on was concluded, prove to be intact.—Several proprietors considered this very satisfactory.—Mr. G. R. ROBINSON moved, and Mr. JOSIAH WILSON seconded, a vote of thanks to the directors, and the meeting adjourned.

BIRMINGHAM AND OXFORD JUNCTION RAILWAY.—An adjourned half-yearly meeting of proprietors was held, yesterday, at Dee's Royal Hotel, Birmingham.—P. H. MUNTZ, Esq., in the chair.—Mr. MOZLEY (of Liverpool) said, that, at present, the only course he should take would be, to oppose the reception of the report and accounts. Since their last meeting, the law proceedings in which they were engaged had made some progress, and there was reason to believe that, in a short time, they would obtain the opinion of the Lord Chancellor; whenever that period might arrive, and existing differences be thereby terminated, no person would rejoice more than himself. He concluded by moving, "That the report, and statement of accounts, presented by the directors to the shareholders, are wholly unsatisfactory, and that the same be not approved or passed."—Mr. GEORGE TURNER seconded the resolution.—Before putting this to the meeting, the CHAIRMAN said, with reference to the allegation contained in the resolution, that a sub-committee had been appointed to examine the accounts, and he heartily wished it had made a report; because he was fully satisfied that nothing had been done that was not strictly in accordance with the Act of Parliament.—The resolution moved by Mr. Mozley was carried by the proxies; and the proceedings thereafter terminated.

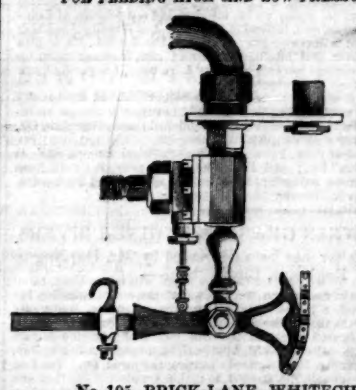
TREMBLAY'S ETHER-HYDRIC ENGINE.—We extract from the *Moniteur Industriel* the following additional particulars of M. de Tremblay's engine, to which he gives the name of the "Ether-hydric Engine." The fuel does not act directly on the ether reservoir, but the steam, after having done its work in an ordinary condensing engine, is made to produce a second effect equal to (it is said) the former. It is led, in pipes, into and through an ether reservoir, which takes the place of the condenser, and becomes a power-generating medium. The steam traverses the reservoir in several small tubes, becomes condensed, and imparts to the ether the whole of its specific or latent heat. The ether then becomes vapourized by the heat imparted by the steam, passes into a cylinder, and sets its piston working; from thence it goes into a reservoir of cold water, where it becomes condensed, and is forced back to the ether reservoir by a pump. Thus the ether is neither consumed nor dissipated; but alternately passes from a volatilised to a liquid state, and creates power in its passage from one state to the other. As to the value of the effect produced, it is sufficient to observe, that sulphuric ether boils at 98°, and gives at that low temperature a tension equal to that of water at 218°, and is of equal power. Supposing M. de Tremblay's invention to succeed, we shall have double the power from a given quantity of fuel—perhaps even more; for the boilers could be fed by the water resulting from the condensed steam, which, being distilled, would not be liable to form incrustation in the boilers.

LONDON AND NORTH-WESTERN RAILWAY—TRENT VALLEY LINE.—In consequence of the late very heavy rains, the directors have, we understand, issued orders to diminish the speed of the express trains over the Trent Valley Railway, which was recently completed, and opened for through traffic a few days ago, to that of the mail trains during the winter months. The ordinary express speed which, on the old line, is 40 miles an hour, will be, we learn, adopted on the Trent Valley Railway early in the spring.—*Railway Record.*

NATIONAL PROVINCIAL BANK OF ENGLAND, 112, Bishopsgate-street, London, Dec. 17, 1847.—The directors of the NATIONAL PROVINCIAL BANK OF ENGLAND hereby give Notice, that a DIVIDEND, at the rate of 6 per cent. per annum, for the half-year ending the 31st of Dec., 1847, will be PAYABLE on the company's stock, on and after Monday, the 17th day of January next, when the dividend warrants will be obtained at the company's offices, 112, Bishopsgate-street, or at the different branches.
The transfer books will be closed on and after Friday, the 24th of December inst., until the dividend becomes payable. By order of the court of directors,
DAN. ROBERTSON, Agent and Manager. 44

CLERICAL, MEDICAL, AND GENERAL LIFE ASSURANCE SOCIETY.
Persons of all ages, and in every station, may assure with this society on very moderate terms. No extra premium is required for sea-risk, or residence in any part of Europe. Persons wishing to visit, or reside in, other parts of the world, may also effect policies at a small increase of premium. BONUSES.
The two first divisions averaged £22 per cent. on the premiums paid; the third, 28*l.* per cent. The FOURTH bonus, declared January, 1847, averaged rather more than £36 per cent.; and from the large amount of profit reserved for future appropriation and other causes, the bonuses hereafter are expected to exceed that amount. 45
Tables of rates, with the last full report, can be obtained of the society's agents, or by addressing a letter to GEO. H. PINCKARD, Resident Secretary.
No. 99, Great Russell-street, Bloomsbury, London.

FROST, NOAKES, & VINCENT'S HIGHLY-IMPROVED SELF-ACTING HYDROSTATIC BALANCE,
FOR FEEDING HIGH AND LOW-PRESSURE STEAM-BOILERS.



This highly-important and simple invention, the proprietors strongly recommend to those parties connected with steam boilers, as it prevents any possibility of explosion through want of water, by its always maintaining the water at a proper level; and it is not easily deranged, and requires little or no attention. 46
STEAM-COCKS screwed to suit the patent wrought-iron tubing, from ¼ inch to 2 inches.
Double flange cocks, of all sizes, safety valves, water indicators, steam-gauges, whistles, &c.
BRASS-WORK, of all descriptions, for steam and other purposes.
FROST, NOAKES, AND VINCENT,
(ORIGINALLY JAMES FROST)
Established 1818,
BRASS-FOUNDERS & PATENT COCKS MANUFACTURERS,
No. 195, BRICK-LANE, WHITECHAPEL, LONDON.
N.B.—WORK MADE TO DRAWINGS.

J. STUBBS' IMPROVED LUBRICATOR.
Registered, Nov. 29, 1847.—MANUFACTURED BY
FROST, NOAKES, AND VINCENT,
195, *BRICK-LANE, WHITECHAPEL, LONDON.* 47
The ADVANTAGE this MACHINE presents over any other now in use for OILING MACHINERY, is, that the OIL can be DISCHARGED in ANY QUANTITY, as required—viz., from 1 drop in five minutes to 20 a minute; and is well adapted for connecting-rods, excentrics, &c., as the oil cannot be split by any sudden jerk, or the action disarranged. COPY OF SPECIFICATION:—

FIG 1.

FIG. 2.

Fig. 1, is an external elevation, and fig. 2, a sectional elevation of this instrument. A, A, is an outer case, which contains the oil to be used for lubrication. B, is a screwed neck, by which it is fixed to the pedestal, or brass, of the bearing upon which it is applied. C, is a graduated spindle—the lower end of which forms a valve, which, as it is lifted further up from its seat, allows a proportionately greater quantity of oil to escape from the aperture, *a*, into which the oil is admitted through a narrow slot, *b*, which is cut in the side of the tube, *c*, of the valve spindle. The graduations upon the spindle, *c*, indicates the length the valve is lifted, and, consequently, the quantity of oil allowed to pass; *d*, is a spring, which keeps the valve at any height it may be set to; and, *e*, is a small pin, projecting from the side of the spindle, which keeps the slot, *b*, always clear of any thing which would obstruct the passage of the oil. D, is a cover to the case, A, which prevents the spilling of the oil by any sudden jerk.—These arrangements admit of the oil being supplied to the journal in drops, at greater or lesser intervals of time, according to the size and requirements of the parts to be oiled.

CALEDONIAN RAILWAY—LOANS ON DEBENTURES.
The CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS OF LOANS ON DEBENTURES, in sums of not less than £500, for three or five years—bearing interest at the rate of 5 per cent. per annum, payable half-yearly, in Edinburgh, Glasgow, London, Liverpool, Manchester, or Bristol.
Tenders to be addressed to this office. Parties may also communicate personally with Messrs. Foster and Braithwaite, 68, Old Broad-street, London.
By order of the directors, D. RANKINE, Treasurer.
Caledonian Railway Office, 122, Princes-street, Edinburgh, March 26, 1847. 48

BIRMINGHAM AND OXFORD JUNCTION RAILWAY COMPANY.—FURTHER CALL OF FIVE POUNDS PER SHARE.—The directors having made a further CALL of FIVE POUNDS per share upon the respective shareholders in this undertaking, PAYABLE on the 20th day of December now next, Notice is hereby given, that the shareholders are required to pay such call on the said 20th day of December now next, to the persons and at the places hereinafter named, or some or one of them (that is to say):—
To the Birmingham Banking Company, at their bank in Birmingham.
To Messrs. Attwoods, Spooner, and Co., at their bank in Birmingham. 49
To Messrs. Jones Loyd and Co., at their bank in Lothbury, London.
To Messrs. Spooner, Attwoods, and Co., at their bank in Gracechurch-street, London.
To Messrs. Moss and Co., at their bank in Liverpool.
And, in default of payment being so made, the shareholders making such default will be charged interest, at the rate of £5 per centum per annum, from the last-mentioned date, until the call is actually paid.
A circular will be sent to each shareholder, which must be deposited at the bankers', when the call is paid. By order of the board of directors,
34, Bennett's-hill, Birmingham, Nov. 10, 1847. JOHN W. KIRSHAW, Sec.

BIRMINGHAM AND OXFORD JUNCTION RAILWAY.
TO THE DIRECTORS OF THE BIRMINGHAM AND OXFORD JUNCTION RAILWAY COMPANY.
WE, the undersigned, being shareholders in the Birmingham and Oxford Junction Railway Company, holding in the aggregate more than five thousand shares (that is to say, more than one-tenth part of the capital), therein do by this writing under our hands require you forthwith, on the receipt hereof, to call an EXTRAORDINARY GENERAL MEETING of the shareholders of the said company, for the following objects or purposes, that is to say, for the purpose of considering the subject of an action lately commenced against the said company, by Messieurs Samuel Morton Peto and William Eastied, and also the several actions which have been commenced in the name of the said company against various shareholders therein, for enforcing payment of a call made, or purporting to have been made, on the twelfth day of June, one thousand eight hundred and forty-seven; and for the purpose of considering and determining upon and giving such directions as may be thought fit, as to the course to be adopted by the said company with reference to such actions respectively, and the subjects thereof respectively, and of considering the propriety of appointing, and if so thought fit of appointing, under the common seal of the said company or otherwise, and directing the employment of an attorney and solicitor, or attorneys and solicitors of the said company, to act on behalf of the said company generally and in all matters or on such particular matters, and for such period, and either exclusively or otherwise, as the said meeting shall think fit; and resolve, and also to consider the propriety of removing, and if thought proper to remove, or discontinue the employment of any person or persons who have, or has, acted as attorneys or solicitors, or as attorney or solicitor of the said company, and giving such directions, and making such orders as the said meeting may deem expedient in reference to, or consequential upon, any such appointment, employment, or removal, or other the matters aforesaid, or any of them; and also to take into consideration, and to determine whether any, and if any, what measures should be taken as to soliciting, prosecuting, supporting, or opposing any bills or bill, or other proceedings or proceeding before Parliament on the behalf, or in the name, of the said company; and as to taking, prosecuting, discontinuing, withdrawing, or abandoning, any notices or other proceedings which have been, or may be, given or taken with reference to any such bills or bill, or other proceedings in Parliament, and giving all such directions as to such meeting may seem proper in reference to any such matters.—Witness our hands, this 5th day of November, 1847.

Elias J. Mosley	Aubrey Alexander Hogston
T. D. Hornby	John Sanderson
Edward Cropper	Christopher Hird Jones
William Reynolds, jun.	Thomas Booth 50
Robert Bickersteth	Charles Wilson
William Hall	Robert Jones
Lewin Mozley	James Ryley
Thomas Arthur Hope	Hardman Earle
Thomas Goodier	Edward Tootal
Charles Mozley	Samuel Brooks
Josiah Jones	Absalom Watkin
Henry Tootal	W. John Beale
Samuel Beale	Abel Peyton
Harman Grisewood	T. R. Cobb
John Edward Phillips	

The requisition above set forth having been presented to the directors of the Birmingham and Oxford Junction Railway Company, Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders of the said company will be HELD at Dee's Royal Hotel, in Birmingham, on Tuesday, the 28th day of December next, at half-past Two o'clock in the afternoon. P. H. MUNTZ, Chairman.
34, Bennett's-hill, Birmingham, November 27, 1847. JOHN W. KIRSHAW, Secretary.

ELECTRIC TELEGRAPH COMPANY,
LONDON, 345, STRAND, September 1, 1847.
COMMERCIAL TELEGRAPH.
The works of the lines for commercial communications, between the places enumerated below, embracing a SYSTEM of TELEGRAPHS for COMMERCIAL PURPOSES only, and distinct from that reserved for the special use of railways, being so far advanced as to admit of their completion by the commencement of the coming year, the directors think that the time has now arrived, when it becomes their duty to make known the arrangements which they contemplate for the accommodation of the public.
STATIONS will BE OPENED, in central situations, in the PRINCIPAL TOWNS, whence MESSAGES and DISPATCHES will be FORWARDED TO, and RECEIVED FROM, all the OTHER STATIONS of the ELECTRIC TELEGRAPH COMPANY.
In order to give to Merchants, Bankers, Manufacturers, and all connected with trade, the greatest possible amount of information, a ROOM will be RESERVED in each of the COMPANY'S STATIONS for SUBSCRIBERS, in which will be received, tabulated, and exhibited, all Intelligence of Commercial or Public Interest—for instance: 51
SHIP LISTS, from the various Ports.
SHARE LISTS, from the various Exchanges.
PRICES CURRENT.
STOCK EXCHANGE LISTS.
CORN MARKETS, from the various Towns.
PRICES OF LIVE STOCK, &c. &c.
In LONDON, a CENTRAL STATION, suited to the importance of the metropolis, is in COURSE OF ERECTION, in the immediate vicinity of the Bank and Royal Exchange; in this Station the whole TELEGRAPHIC NEWS of the COUNTRY will be CONCENTRATED, and FORWARDED in EVERY DIRECTION. And here, as in other towns, a ROOM will be RESERVED for SUBSCRIBERS.
The SUBSCRIPTION to these ROOMS will be TWO GUINEAS per annum, paid in advance, which will entitle SUBSCRIBERS to the RIGHT of ENTRANCE to ALL the SUBSCRIPTION ROOMS of the COMPANY—including the Central Station at London.
The foregoing details some of the advantages of the Commercial Telegraph to subscribers; but the requirements of the public in general will be provided for by the establishment of offices, which will at all times be open for the reception and transmission of messages and dispatches; while messengers will be kept at the various stations, by whom dispatches may be sent out to any part of the town where the communication has been received by Telegraph at the Company's Station.
Subscribers' Names are received at the Commercial Telegraph Office, where any further information may be obtained.
The following are the Towns to which the Commercial Telegraph will be first extended:—

London	Chester	Southampton	Derby	Darlington
Margate	Liverpool	Winchester	Nottingham	Newcastle
Ramsgate	Rotherham	Dorchester	Lincoln	Berwick
Deal	Barnsley	Bristol	Chesterfield	Edinburgh
Dover	Wakefield	Gloucester	Sheffield	Glasgow
Folkestone	Leeds	Cheltenham	Bradford	Scarborough
Canterbury	Halifax	Peterborough	Wisbeach	Bridlington
Northampton	Rochdale	Yarmouth	Lowestoff	Stamford
Coventry	Hull	Huntingdon	Cambridge	Norwich
Birmingham	Maidstone	Hertford	Chelmsford	St. Ives
Wolverhampton	Tonbridge	Manchester	Ipswich	Ware
Stafford	Gosport	Leicester	York	Colchester

J. LEWIS RICARDO, Chairman.

NATIONAL LOAN FUND LIFE ASSURANCE SOCIETY,
26, *CORNHILL, LONDON.*
Capital £500,000.—Empowered by Act of Parliament.
This institution embraces important and substantial advantages with respect to Life Assurances and Deferred Annuities. The assured has, on all occasions, the power to borrow, without expense or forfeiture of the policy, two-thirds of the premiums paid (see table); also the option of selecting benefits, and the conversion of his interests to meet other conveniences or necessity.
Assurances for terms of years are granted on the lowest possible rates. 52
DIVISION OF PROFITS.
The remarkable success and increasing prosperity of the society has enabled the directors, at the last annual investigation, to declare a fourth bonus, varying from 35 to 85 per cent. on the premiums paid on each policy effected on the profit scale.
EXAMPLES.

Age	*Sum.*	*Prem.*	*Year.*	*Bonus added.*	*Bonus in Cash.*	*Permanent reduction of Premium.*	*Assured may Borrow.*
60	£1000	£29 3 4	1837	£217 15 1	£109 0 11	£16 0 4	£445 0 0
			1838	192 3 0	87 1 4	13 10 2	395 11 1
			1839	165 11 10	74 1 9	11 3 1	346 2 3
			1840	116 7 6	54 0 10	7 19 10	296 13 4
			1841	111 6 8	49 10 0	7 10 4	247 4 5

The division of profits is annual, and the next will be made in December of the present year. F. FERGUSON CAMROUX, Secretary.

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*** It will at all times save much delay and inconvenience, if communications are directed simply
To THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.
And POST-OFFICE ORDERS, &c., must be made payable to WILLIAM SALMON MANSELL, as acting for the proprietors.